



#6

Sequence Listing

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Gerritsen, Mary E.
Goddard, Audrey
Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
Hillan, Kenneth J
Kljavin, Ivar J.
Kuo, Sophia S.
Napier, Mary A.
Pan, James;
Paoni, Nicholas F.
Roy, Margaret Ann
Shelton, David L.
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| Ser Asn Thr Val Thr Ala Ala His Ile Lys Lys Phe Thr Phe Val | 320 | 325 | 330 |
| Cys Met Ala Leu Ser Leu Thr Leu Cys Phe Val Met Phe Trp Thr | 335 | 340 | 345 |
| Pro Asn Val Ser Glu Lys Ile Leu Ile Asp Ile Ile Gly Val Asp | 350 | 355 | 360 |
| Phe Ala Phe Ala Glu Leu Cys Val Val Pro Leu Arg Ile Phe Ser | 365 | 370 | 375 |
| Phe Phe Pro Val Pro Val Thr Val Arg Ala His Leu Thr Gly Trp | 380 | 385 | 390 |
| Leu Met Thr Leu Lys Lys Thr Phe Val Leu Ala Pro Ser Ser Val | 395 | 400 | 405 |
| Leu Arg Ile Ile Val Leu Ile Ala Ser Leu Val Val Leu Pro Tyr | 410 | 415 | 420 |
| Leu Gly Val His Gly Ala Thr Leu Gly Val Gly Ser Leu Leu Ala | 425 | 430 | 435 |
| Gly Phe Val Gly Glu Ser Thr Met Val Ala Ile Ala Ala Cys Tyr | 440 | 445 | 450 |
| Val Tyr Arg Lys Gln Lys Lys Lys Met Glu Asn Glu Ser Ala Thr | 455 | 460 | 465 |
| Glu Gly Glu Asp Ser Ala Met Thr Asp Met Pro Pro Thr Glu Glu | 470 | 475 | 480 |
| Val Thr Asp Ile Val Glu Met Arg Glu Glu Asn Glu | 485 | 490 | |

<210> 8
<211> 535
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 33, 66, 96, 387
<223> unknown base

<400> 8
cctgacagaa gtgccccgga gctgggggag atncaacatt aagaagatgc 50
tgagcttctg gtgcennttg gctctaattc tggccacaca gagaancagt 100
cggcctattg tcaacctctt tgtttcccg gaccttggtg gcagttctgc 150
agccacagag gcagtggcga ttttgacagc cacataccct gtgggtcaca 200
tgccatacgg ctggttgacg gaaatccgtg ctgtgtatcc tgctttcgac 250
aagaataacc ccagcaacaa actggtgagc acgagcaaca cagtcacggc 300
ggcccacatc aagaagttca ccttcgtctg catggctctg tcaactcacgc 350
tctgtttcgt gatgttttgg acaccaacg tgtctgngaa aatcttgata 400
gacatcatcg gagtggactt tgcctttgca gaactctgtg ttgttccttt 450
gcggatcttc tcctttcttc cagttccagt cacagtgagg gcgcatctca 500
ccgggtggct gatgacactg aagaaaacct tcgtc 535

<210> 9
<211> 434
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273,
293, 296, 305, 336, 358, 361
<223> unknown base

<400> 9
tgacggaatc ccgggctggg tatcctgggt tngacaagat aaacccccag 50
caanaaattg gggagcaggg caaaacagtn acgggcagcc cacatcaaga 100
agttcacctt ngtttgnatg gntctgtcaa ctcacgctnt gtttcgtgat 150
gttttgagaca cccaaagtgt ttgagaaaat tttgatagac atnatcggag 200
tggantttgc ctttgcagaa ntttgnntg ttcctttgcg gatcttctcc 250
tttttcccag ttccagtcac agngagggcg catctcaccg ggnggntgat 300

gacantgaag aaaacctttg tccttgcccc cagctntttg gtgcggatca 350
ttgtcctnat ngccagcctt gtggctctac cctacctggg ggtgcacggt 400
gcgaccctgg gcgtgggttc cctcctggcg ggca 434

<210> 10
<211> 154
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 33, 49, 68, 83, 90, 98, 119
<223> unknown base

<400> 10
tattcccagt tccggtcacg gggagggcgc atntcacgg gtggctgang 50
acactgaaga aaaccttngt ccttgcccc agntttgtgn tgcggatnat 100
cgtctcatc gccagcctng tggctctacc ctacctggg gtgcacggtg 150
agac 154

<210> 11
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 11
ctgatccggt tcttggtgcc cctg 24

<210> 12
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 12
gctctgtcac tcacgctc 18

<210> 13
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 13
tcattctctc cctctccc 18

<210> 14
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 14
ccttccgccca cggagttc 18

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 15
ggcaaagtcc actccgatga tgtc 24

<210> 16
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 16
gcctgctgtg gtcacaggtc tccg 24

<210> 17
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 17
tcggggagca ggccttgaac cggggcattg ctgctgtcaa ggagg 45

<210> 18
<211> 1901
<212> DNA
<213> Homo sapiens

<400> 18
gccccgcgcc cggcgccggg cgcccgaagc cgggagccac cgccatgggg 50
gcctgcctgg gagcctgtc cctgtcagc tgcgcgtcct gcctctgcgg 100
ctctgcccc tgcatcctgt gcagctgctg ccccgccagc cgcaactcca 150

ccgtgagccg cctcatcttc acgttcttcc tcttctggg ggtgctggtg 200
tccatcatta tgctgagccc gggcgaggag agtcagctct acaagctgcc 250
ctgggtgtgt gaggagggg cgggatccc caccgtctg cagggccaca 300
tcgactgtgg ctccctgctt ggctaccgag ctgtctaccg catgtgcttc 350
gccacggcgg ccttcttctt cttctttttc accctgctca tgctctgct 400
gagcagcagc cgggaccccc gggctgcat ccagaatggg ttttggttct 450
ttaagttcct gatcctggtg ggcctcaccg tgggtgcctt ctacatccct 500
gacggctcct tcaccaacat ctggttctac ttcggcgctg tgggctcctt 550
cctcttcac ctcattcagc tgggtgctgt catcgacttt gcgcactcct 600
ggaaccagcg gtggctgggc aaggccgagg agtgcgattc ccgtgcctgg 650
tacgcaggcc tcttcttctt cactctcttc ttctacttgc tgcgatcgc 700
ggcgtggcg ctgatgttca tgtactacac tgagcccagc ggctgccacg 750
agggcaaggt cttcatcagc ctcaacctca cttctgtgt ctgcgtgtcc 800
atcgctgctg tctgccccaa ggtccaggac gccagccca actcgggtct 850
gtgcaggcc tcggtcatca cctctacac catgtttgtc acctggtcag 900
ccctatccag tatccctgaa cagaaatgca accccattt gccaaccag 950
ctgggcaacg agacagttgt ggcaggcccc gagggctatg agaccagtg 1000
gtgggatgcc ccgagcattg tgggcctcat catcttctc ctgtgcaccc 1050
tcttcatcag tctgcgtcc tcagaccacc ggcaggtgaa cagcctgatg 1100
cagaccgagg agtgcaccac tatgctagac gccacacagc agcagcagca 1150
gcaggtggca gcctgtgagg gccgggcctt tgacaacgag caggacggcg 1200
tcacctacag ctactccttc ttccaattct gcctggtgct ggcctcactg 1250
cacgtcatga tgacgtcac caactggtac aagcccggg agaccggaa 1300
gatgatcagc acgtggaccg ccgtgtgggt gaagatctgt gccagctggg 1350
cagggtgct cctctacctg tggacctgg tagcccaact cctcctgcgc 1400
aaccgcgact tcagctgagg cagcctcaca gcctgccatc tggtgctcc 1450
tgccacctgg tgctctcgg ctcggtgaca gccaacctgc cccctccca 1500
caccaatcag ccaggctgag cccccacccc tgcccagct ccaggacctg 1550
cccctgagcc gggccttcta gtcgtagtgc cttcagggtc cgaggagcat 1600

caggctcctg cagagcccca tcccccgcc acaccacac ggtggagctg 1650
 cctcttcctt cccctcctcc ctgttgcca tactcagcat ctcgatgaa 1700
 agggctccct tgtcctcagg ctccacggga gcggggctgc tggagagagc 1750
 ggggaactcc caccacagtg gggcatccgg cactgaagcc ctggtgttcc 1800
 tggtcacgtc cccagggga ccctgcccc ttctggact tcgtgcctta 1850
 ctgagtctct aagacttttt ctaataaaca agccagtgcg tgtaaaaaaa 1900
 a 1901

<210> 19

<211> 457

<212> PRT

<213> Homo sapiens

<400> 19

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Cys | Leu | Gly | Ala | Cys | Ser | Leu | Leu | Ser | Cys | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Leu | Cys | Gly | Ser | Ala | Pro | Cys | Ile | Leu | Cys | Ser | Cys | Cys | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ser | Arg | Asn | Ser | Thr | Val | Ser | Arg | Leu | Ile | Phe | Thr | Phe | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Phe | Leu | Gly | Val | Leu | Val | Ser | Ile | Ile | Met | Leu | Ser | Pro | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Glu | Ser | Gln | Leu | Tyr | Lys | Leu | Pro | Trp | Val | Cys | Glu | Glu | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Gly | Ile | Pro | Thr | Val | Leu | Gln | Gly | His | Ile | Asp | Cys | Gly | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Gly | Tyr | Arg | Ala | Val | Tyr | Arg | Met | Cys | Phe | Ala | Thr | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Phe | Phe | Phe | Phe | Phe | Thr | Leu | Leu | Met | Leu | Cys | Val | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ser | Arg | Asp | Pro | Arg | Ala | Ala | Ile | Gln | Asn | Gly | Phe | Trp | Phe |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Lys | Phe | Leu | Ile | Leu | Val | Gly | Leu | Thr | Val | Gly | Ala | Phe | Tyr |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Asp | Gly | Ser | Phe | Thr | Asn | Ile | Trp | Phe | Tyr | Phe | Gly | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Ser | Phe | Leu | Phe | Ile | Leu | Ile | Gln | Leu | Val | Leu | Leu | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | |
|---|-----|-----|-----|
| Asp Phe Ala His Ser Trp Asn Gln Arg Trp Leu Gly Lys Ala Glu | 185 | 190 | 195 |
| Glu Cys Asp Ser Arg Ala Trp Tyr Ala Gly Leu Phe Phe Phe Thr | 200 | 205 | 210 |
| Leu Leu Phe Tyr Leu Leu Ser Ile Ala Ala Val Ala Leu Met Phe | 215 | 220 | 225 |
| Met Tyr Tyr Thr Glu Pro Ser Gly Cys His Glu Gly Lys Val Phe | 230 | 235 | 240 |
| Ile Ser Leu Asn Leu Thr Phe Cys Val Cys Val Ser Ile Ala Ala | 245 | 250 | 255 |
| Val Leu Pro Lys Val Gln Asp Ala Gln Pro Asn Ser Gly Leu Leu | 260 | 265 | 270 |
| Gln Ala Ser Val Ile Thr Leu Tyr Thr Met Phe Val Thr Trp Ser | 275 | 280 | 285 |
| Ala Leu Ser Ser Ile Pro Glu Gln Lys Cys Asn Pro His Leu Pro | 290 | 295 | 300 |
| Thr Gln Leu Gly Asn Glu Thr Val Val Ala Gly Pro Glu Gly Tyr | 305 | 310 | 315 |
| Glu Thr Gln Trp Trp Asp Ala Pro Ser Ile Val Gly Leu Ile Ile | 320 | 325 | 330 |
| Phe Leu Leu Cys Thr Leu Phe Ile Ser Leu Arg Ser Ser Asp His | 335 | 340 | 345 |
| Arg Gln Val Asn Ser Leu Met Gln Thr Glu Glu Cys Pro Pro Met | 350 | 355 | 360 |
| Leu Asp Ala Thr Gln Gln Gln Gln Gln Gln Val Ala Ala Cys Glu | 365 | 370 | 375 |
| Gly Arg Ala Phe Asp Asn Glu Gln Asp Gly Val Thr Tyr Ser Tyr | 380 | 385 | 390 |
| Ser Phe Phe His Phe Cys Leu Val Leu Ala Ser Leu His Val Met | 395 | 400 | 405 |
| Met Thr Leu Thr Asn Trp Tyr Lys Pro Gly Glu Thr Arg Lys Met | 410 | 415 | 420 |
| Ile Ser Thr Trp Thr Ala Val Trp Val Lys Ile Cys Ala Ser Trp | 425 | 430 | 435 |
| Ala Gly Leu Leu Leu Tyr Leu Trp Thr Leu Val Ala Pro Leu Leu | 440 | 445 | 450 |
| Leu Arg Asn Arg Asp Phe Ser | 455 | | |

<210> 20
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 20
gccgcctcat cttcacgttc ttcc 24

<210> 21
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 21
tcatccagct ggtgctgctc 20

<210> 22
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 22
cttcttccac ttctgcctgg 20

<210> 23
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 23
cctgggcaaa aatgcaac 18

<210> 24
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 24
caggaatgta gaaggcaccc acgg 24

<210> 25
<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 25

tggcacagat cttcacccac acgg 24

<210> 26

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 26

tgtccatcat tatgctgagc ccgggcgtgg agagtcagct ctacaagctg 50

<210> 27

<211> 1351

<212> DNA

<213> Homo sapiens

<400> 27

gagcgaggcc ggggactgaa ggtgtgggtg tcgagccctc tggcagaggg 50

ttaacctggg tcaaatgcac ggattctcac ctctacagt tacgctctcc 100

cgcggcacgt ccgcgaggac ttgaagtcct gagcgctcaa gtttgtccgt 150

aggtcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200

tctgtagagc attgtgccta tttccccgag tctttgctgc cgaagctgtg 250

actgccgatt cggaagtcct tgaggagcgt cagaagcggc ttccctacgt 300

cccagagccc tattaccgg aatctggatg ggaccgcctc cgggagctgt 350

ttggcaaaga tgaacagcag agaatttcaa aggaccttgc taatatctgt 400

aagacggcag ctacagcagg catcattggc tgggtgtatg ggggaatacc 450

agcttttatt catgctaaac aacaatacat tgagcagagc caggcagaaa 500

tttatcataa ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca 550

cgaggcttca ttcgttatgg ctggcgctgg ggttgagaa ctgcagtgtt 600

tgtgactata ttcaacacag tgaacactag tctgaatgta taccgaaata 650

aagatgcctt aagccatttt gtaattgcag gagctgtcac gggaagtctt 700

tttaggataa acgtaggcct gcgtggcctg gtggctggtg gcataattgg 750

agccttgctg ggcactcctg taggaggcct gctgatggca tttcagaagt 800

acgctggtga gactgttcag gaaagaaaac agaaggatcg aaaggcactc 850
 catgagctaa aactggaaga gtggaaaggc agactacaag ttactgagca 900
 cctccctgag aaaattgaaa gtagtttacg ggaagatgaa cctgagaatg 950
 atgctaagaa aattgaagca ctgctaaacc ttcctagaaa cccttcagta 1000
 atagataaac aagacaagga ctgaaagtgc tctgaacttg aaactcactg 1050
 gagagctgaa gggagctgcc atgtccgatg aatgccaaca gacaggccac 1100
 tctttggtca gcctgctgac aaatttaagt gctggtacct gtggtggcag 1150
 tggcttgctc ttgtcttttt cttttctttt taactaagaa tggggctgtt 1200
 gtactctcac ttactttatc cttaaattta aatacatact tatgtttgta 1250
 ttaatctatc aatatatgca tacatggata tatccaccca cctagatttt 1300
 aagcagtaaa taaaacattt cgcaaaagat taaagttgaa ttttacagtt 1350
 t 1351

<210> 28
 <211> 285
 <212> PRT
 <213> Homo sapiens

<400> 28
 Met Glu Val Pro Pro Pro Ala Pro Arg Ser Phe Leu Cys Arg Ala
 1 5 10 15
 Leu Cys Leu Phe Pro Arg Val Phe Ala Ala Glu Ala Val Thr Ala
 20 25 30
 Asp Ser Glu Val Leu Glu Glu Arg Gln Lys Arg Leu Pro Tyr Val
 35 40 45
 Pro Glu Pro Tyr Tyr Pro Glu Ser Gly Trp Asp Arg Leu Arg Glu
 50 55 60
 Leu Phe Gly Lys Asp Glu Gln Gln Arg Ile Ser Lys Asp Leu Ala
 65 70 75
 Asn Ile Cys Lys Thr Ala Ala Thr Ala Gly Ile Ile Gly Trp Val
 80 85 90
 Tyr Gly Gly Ile Pro Ala Phe Ile His Ala Lys Gln Gln Tyr Ile
 95 100 105
 Glu Gln Ser Gln Ala Glu Ile Tyr His Asn Arg Phe Asp Ala Val
 110 115 120
 Gln Ser Ala His Arg Ala Ala Thr Arg Gly Phe Ile Arg Tyr Gly
 125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Arg | Trp | Gly | Trp | Arg | Thr | Ala | Val | Phe | Val | Thr | Ile | Phe | Asn |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Thr | Val | Asn | Thr | Ser | Leu | Asn | Val | Tyr | Arg | Asn | Lys | Asp | Ala | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | His | Phe | Val | Ile | Ala | Gly | Ala | Val | Thr | Gly | Ser | Leu | Phe | Arg |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ile | Asn | Val | Gly | Leu | Arg | Gly | Leu | Val | Ala | Gly | Gly | Ile | Ile | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Leu | Leu | Gly | Thr | Pro | Val | Gly | Gly | Leu | Leu | Met | Ala | Phe | Gln |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Lys | Tyr | Ala | Gly | Glu | Thr | Val | Gln | Glu | Arg | Lys | Gln | Lys | Asp | Arg |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Lys | Ala | Leu | His | Glu | Leu | Lys | Leu | Glu | Glu | Trp | Lys | Gly | Arg | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Gln | Val | Thr | Glu | His | Leu | Pro | Glu | Lys | Ile | Glu | Ser | Ser | Leu | Arg |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Glu | Asp | Glu | Pro | Glu | Asn | Asp | Ala | Lys | Lys | Ile | Glu | Ala | Leu | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Asn | Leu | Pro | Arg | Asn | Pro | Ser | Val | Ile | Asp | Lys | Gln | Asp | Lys | Asp |
| | | | | 275 | | | | | 280 | | | | | 285 |

<210> 29
 <211> 324
 <212> DNA
 <213> Homo sapiens

<400> 29
 cggaagtccc ttgaggagcg tcagaagcgg cttccctacg tcccagagcc 50
 ctattacccg gaatctggat gggaccgctc cgggagctgt ttggcaaaga 100
 tgaacagcag agaatttcaa aggaccttgc taatatctgt aagacggcag 150
 ctacagcagg catcattggc tgggtgtatg ggggaatacc agcttttatt 200
 catgctaaac aacaatacat tgagcagagc caggcagaaa tttatcataa 250
 ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca cgaggcttca 300
 ttcgttcatg gctggcgccg aacc 324

<210> 30
 <211> 377
 <212> DNA
 <213> Homo sapiens

<220>

<221> unsure
<222> 262, 330, 371
<223> unknown base

<400> 30
tcaagtttgt ccgtaggtcg agagaaggcc atggagggtgc cgccaceggc 50
accgcggagc ttttttctgt agagcattgt gcctatttcc ccgagttttt 100
gctgccgaag ctgtgactgc cgattcggaa gtccttgagg agcgtcagaa 150
gcggtctccc tacgtcccag agccctatta cccggaattt ggatgggacc 200
gcctccggga gctgtttggc aaagatgaac agcagagaat ttcaaaggac 250
cttgctgata tntgtaagac ggcagctaca gcaggcatca ttggctgggt 300
gtatggggga ataccagctt ttattcatgn taaacaacaa tacattgagc 350
agagccaggc agaaatttat nataacc 377

<210> 31
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 31
tcgtacagtt acgctctccc 20

<210> 32
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 32
cttgaggagc gtcagaagcg 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 33
ataacgaatg aagcctcgtg 20

<210> 34
<211> 40
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 34

gctaatatct gtaagacggc agctacagca ggcatcattg 40

<210> 35

<211> 1819

<212> DNA

<213> Homo sapiens

<400> 35

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ccaccacagt ctgcgttgct gcccgcctg ggccaggccc caaaggcaag 100
gacaaagcag ctgtcaggga acctccgccg gagtcgaatt tacgtgcagc 150
tgccggcaac cacaggttcc aagatggttt gcgggggctt cgcgtgttcc 200
aagaactgcc tgtgcgcctt caacctgctt tacaccttgg ttagtctgct 250
gctaattgga attgctgcgt ggggcattgg cttcgggctg atttccagtc 300
tccgagtggc cggcgtggtc attgcagtgg gcattcttctt gttcctgatt 350
gctttagtgg gtctgattgg agctgtaaaa catcatcagg tgttgctatt 400
tttttatatg attattctgt tacttgtatt tattgttcag ttttctgtat 450
cttgcgcttg tttagccctg aaccaggagc aacagggtca gcttctggag 500
gttggttga acaatacggc aagtgtcga aatgacatcc agagaaatct 550
aaactgctgt gggttccgaa gtgttaacct aatgacacc tgtctggcta 600
gctgtgttaa aagtgaccac tcgtgctcgc catgtgctcc aatcatagga 650
gaatatgctg gagaggtttt gagatttggt ggtggcattg gcctgttctt 700
cagttttaca gagatcctgg gtgtttggct gacctacaga tacaggaacc 750
agaaagaccc ccgcgcgaat cctagtgcac tcctttgatg agaaaacaag 800
gaagatttcc tttcgtatta tgatcttggt cactttctgt aattttctgt 850
taagctccat ttgccagttt aaggaaggaa aactatctg gaaaagtacc 900
ttattgatag tggaattata ttttttact ctatgtttct ctacatgttt 950
ttttctttcc gttgctgaaa aatatttgaa acttggtggc tctgaagctc 1000
ggtggcacct ggaatttact gtattcattg tcgggcactg tccactgtgg 1050
cctttcttag catttttacc tgcagaaaaa ctttgatgg taccactgtg 1100

ttggttatat ggtgaatctg aacgtacatc tcaactggat aattatatgt 1150
 agcactgtgc tgtgtagata gttcctactg gaaaaagagt ggaaatttat 1200
 taaaatcaga aagtatgaga tcctgttatg ttaagggaaa tccaaattcc 1250
 caatTTTTTT ttggtctTTTT aggaaagatt gttgtggtaa aaagtgttag 1300
 tataaaaatg ataatttact tgtagtcttt tatgattaca ccaatgtatt 1350
 ctagaaatag ttatgtctta ggaaattgtg gtttaatttt tgacttttac 1400
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 aaaagatatt tgattatctt aaaaattggt aaataccgtt ttcatgaaat 1650
 ttctcagtat tgtaacagca acttgtcaaa cctaagcata tttgaatatg 1700
 atctcccata atttgaaatt gaaatcgtat tgtgtggctc tgtatattct 1750
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 taaaagaaag taatggaag 1819

<210> 36

<211> 204

<212> PRT

<213> Homo sapiens

<400> 36

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Cys | Gly | Gly | Phe | Ala | Cys | Ser | Lys | Asn | Cys | Leu | Cys | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Asn | Leu | Leu | Tyr | Thr | Leu | Val | Ser | Leu | Leu | Leu | Ile | Gly | Ile |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Ala | Trp | Gly | Ile | Gly | Phe | Gly | Leu | Ile | Ser | Ser | Leu | Arg | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Val | Gly | Val | Val | Ile | Ala | Val | Gly | Ile | Phe | Leu | Phe | Leu | Ile | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Val | Gly | Leu | Ile | Gly | Ala | Val | Lys | His | His | Gln | Val | Leu | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Phe | Tyr | Met | Ile | Ile | Leu | Leu | Leu | Val | Phe | Ile | Val | Gln | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Val | Ser | Cys | Ala | Cys | Leu | Ala | Leu | Asn | Gln | Glu | Gln | Gln | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Leu | Leu | Glu | Val | Gly | Trp | Asn | Asn | Thr | Ala | Ser | Ala | Arg | Asn | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asp | Ile | Gln | Arg | Asn | Leu | Asn | Cys | Cys | Gly | Phe | Arg | Ser | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Asn | Asp | Thr | Cys | Leu | Ala | Ser | Cys | Val | Lys | Ser | Asp | His | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Cys | Ser | Pro | Cys | Ala | Pro | Ile | Ile | Gly | Glu | Tyr | Ala | Gly | Glu | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Arg | Phe | Val | Gly | Gly | Ile | Gly | Leu | Phe | Phe | Ser | Phe | Thr | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ile | Leu | Gly | Val | Trp | Leu | Thr | Tyr | Arg | Tyr | Arg | Asn | Gln | Lys | Asp | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Arg | Ala | Asn | Pro | Ser | Ala | Phe | Leu | | | | | | | |
| | | | | 200 | | | | | | | | | | | |

<210> 37
 <211> 390
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336
 <223> unknown base

<400> 37
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 tattctgtaa nttgtattta ttgttcagtt ttntgtatct tgcgcttggt 100
 tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tggttggaac 150
 aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200
 gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250
 gtgaccactn gtgctcgcca tgtgctccaa tcataggaga atatgctgga 300
 gaggttttga gatttggttg tggcattggc ctgttnttca gttttacaga 350
 gatcctgggt gtttggctga cctacagata caggaaccag 390

<210> 38
 <211> 566
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 27

<223> unknown base

<400> 38

aatcccaaat tccccaattt ttttggncctt tttagggaat gatgtgttgt 50
ggtaaaaagt gttagtataa aaatgataat ttacttgtag tcttttatga 100
ttacaccaat gtattctaga atagttatgt cttaggaaat tgtggtttta 150
tttttgactt ttacaggtaa gtgcaaagga gaagtgggtt catgaaatgt 200
tctaattgtat aataacattt accttcagcc tcccatcaga atggaacgag 250
ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300
taatttgaag tctaaaagac tgcattttta aacaagttag tattaatgag 350
ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400
ccgttttcat gaaagttctc agtattgtaa cagcaacttg tcaaacctaa 450
gcatatttga atatgatctc ccataatttg aaattgaaat cgtattgtgt 500
ggaggaaatg gcaatcttat gtgtgctgaa ggacacagta agagcaccaa 550
gttgtgcccc acttgc 566

<210> 39

<211> 264

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 84-85, 206

<223> unknown base

<400> 39

atgattattc tggtacttgt atttattgtt cagttttatg gtatcttgag 50
cttgttttagc ccctgaaacc aggagcaaca gggnnacagc tcctggaggt 100
tggttgccaa caatcacggc caagtgactc cgcaaatgac atcccagaga 150
aatcctaaac tgctgtgggt tccgaagtgt taaccctaat gacacctgtc 200
tggtctngctg tggtaaaagt gaccactcgt gctcgccatg tgctccaatc 250
ataggagaat atgc 264

<210> 40

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 40
accacgtct gcgttgctgc c 21

<210> 41
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 41
gagaatatgc tggagagg 18

<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 42
aggaatgcac taggattcgc gcgg 24

<210> 43
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 43
ggcccaaaag gcaaggacaa agcagctgtc agggaaacctc cgccg 45

<210> 44
<211> 2061
<212> DNA
<213> Homo sapiens

<400> 44
cagtcaccat gaagctgggc tgtgtcctca tggcctgggc cctctacctt 50
tcccttggtg tgctctgggt ggcccagatg ctactggctg ccagttttga 100
gacgtgcag tgtgaggac ctgtctgcac tgaggagagc agctgccaca 150
cggaggatga cttgactgat gcaagggaag ctggcttcca ggtcaaggcc 200
tacactttca gtgaaccctt ccacctgatt gtgtcctatg actggctgat 250
cctccaaggt ccagccaagc cagtttttga aggggacctg ctggttctgc 300
gctgccaggc ctggcaagac tggccactga ctcaggtgac cttctaccga 350

gatggctcag ctctgggtcc ccccgggcct aacagggaat tctccatcac 400
cgtggtacaa aaggcagaca gcgggcacta ccaactgcagt ggcattcttc 450
agagccctgg tcctgggatc ccagaaacag catctgttgt ggctatcaca 500
gtccaagaac' tgtttccagc gccaatctc agagctgtac cctcagctga 550
acccaagca ggaagcccca tgacctgag ttgtcagaca aagttgcccc 600
tgcagaggtc agctgcccgc ctctcttct ccttctacaa ggatggaagg 650
atagtcaaaa gcagggggct ctctcagaa ttccagatcc ccacagcttc 700
agaagatcac tccgggtcat actggtgtga ggcagccact gaggacaacc 750
aagtttgaa acagagcccc cagctagaga tcagagtga gggtgcttc 800
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tccaggaact gctctgagg aggccctgg gcctctgcct ccgccgcaa 900
ccccatcttc tgaggatcca ggcttttctt ctctctggg gatgccagat 950
cctcatctgt atcaccagat gggccttctt ctcaaacaca tgcaggatgt 1000
gagagtcctc ctcggtcacc tgctcatgga gttgagggaa ttatctggcc 1050
accagaagcc tgggaccaca aaggctactg ctgaatagaa gtaaacagtt 1100
catccatgat ctacttaac caccacaata aatctgattc tttattttct 1150
cttctgtcc tgcacatatg cataagtact tttacaagtt gtcccagtg 1200
tttgttagaa taatgtagt aggtgagtgt aaataaattt atataaagt 1250
agaattagag ttagctata attgtgtatt ctctcttaac acaacagaat 1300
tctgctgtct agatcaggaa tttctatctg ttatatogac cagaatgttg 1350
tgatttaaag agaactaatg gaagtggatt gaatacagca gtctcaactg 1400
ggggcaattt tgccccccag aggacattgg gcaatgtttg gagacatttt 1450
ggtcattata ctgggggggt tgggggatgg tgggatgtgt gtctactggc 1500
atccagtaaa tagaagccag gggtgccgct aaacatccta taatgcacag 1550
ggcagtaccc cacaacgaaa aataatctgg cccaaaatgt cagttgtact 1600
gagtttgaga aaccccagcc taatgaaacc ctaggtgttg ggctctggaa 1650
tgggactttg tcccttctaa ttattatctc tttccagcct cattcagcta 1700
ttcttactga cataccagtc tttagctggg gctatggctt gttctttagt 1750
tctagtttgt atccctcaa aagccattat gttgaaatcc taatcccaa 1800

ggtgatggca ttaagaagtg ggcctttggg aagtgattag atcaggagtg 1850
 cagagccctc atgattagga ttagtgccct tatttaaaaa ggccccagag 1900
 agctaactca cccttcacc atatgaggac gtggcaagaa gatgacatgt 1950
 atgagaacca aaaaacagct gtcgccaac accgactctg tcgttgccct 2000
 gatcttgaac ttccagcctc cagaactatg agaaataaaa ttctggttgt 2050
 ttgtagccta a 2061

<210> 45
 <211> 359
 <212> PRT
 <213> Homo sapiens

<400> 45
 Met Lys Leu Gly Cys Val Leu Met Ala Trp Ala Leu Tyr Leu Ser
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 Leu Gly Val Leu Trp Val Ala Gln Met Leu Leu Ala Ala Ser Phe
 20 25 30
 Glu Thr Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser
 35 40 45
 Cys His Thr Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe
 50 55 60
 Gln Val Lys Ala Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val
 65 70 75
 Ser Tyr Asp Trp Leu Ile Leu Gln Gly Pro Ala Lys Pro Val Phe
 80 85 90
 Glu Gly Asp Leu Leu Val Leu Arg Cys Gln Ala Trp Gln Asp Trp
 95 100 105
 Pro Leu Thr Gln Val Thr Phe Tyr Arg Asp Gly Ser Ala Leu Gly
 110 115 120
 Pro Pro Gly Pro Asn Arg Glu Phe Ser Ile Thr Val Val Gln Lys
 125 130 135
 Ala Asp Ser Gly His Tyr His Cys Ser Gly Ile Phe Gln Ser Pro
 140 145 150
 Gly Pro Gly Ile Pro Glu Thr Ala Ser Val Val Ala Ile Thr Val
 155 160 165
 Gln Glu Leu Phe Pro Ala Pro Ile Leu Arg Ala Val Pro Ser Ala
 170 175 180
 Glu Pro Gln Ala Gly Ser Pro Met Thr Leu Ser Cys Gln Thr Lys
 185 190 195

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Gln | Arg | Ser | Ala | Ala | Arg | Leu | Leu | Phe | Ser | Phe | Tyr | 200 | 205 | 210 |
| Lys | Asp | Gly | Arg | Ile | Val | Gln | Ser | Arg | Gly | Leu | Ser | Ser | Glu | Phe | 215 | 220 | 225 |
| Gln | Ile | Pro | Thr | Ala | Ser | Glu | Asp | His | Ser | Gly | Ser | Tyr | Trp | Cys | 230 | 235 | 240 |
| Glu | Ala | Ala | Thr | Glu | Asp | Asn | Gln | Val | Trp | Lys | Gln | Ser | Pro | Gln | 245 | 250 | 255 |
| Leu | Glu | Ile | Arg | Val | Gln | Gly | Ala | Ser | Ser | Ser | Ala | Ala | Pro | Pro | 260 | 265 | 270 |
| Thr | Leu | Asn | Pro | Ala | Pro | Gln | Lys | Ser | Ala | Ala | Pro | Gly | Thr | Ala | 275 | 280 | 285 |
| Pro | Glu | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Pro | Pro | Pro | Thr | Pro | Ser | 290 | 295 | 300 |
| Ser | Glu | Asp | Pro | Gly | Phe | Ser | Ser | Pro | Leu | Gly | Met | Pro | Asp | Pro | 305 | 310 | 315 |
| His | Leu | Tyr | His | Gln | Met | Gly | Leu | Leu | Leu | Lys | His | Met | Gln | Asp | 320 | 325 | 330 |
| Val | Arg | Val | Leu | Leu | Gly | His | Leu | Leu | Met | Glu | Leu | Arg | Glu | Leu | 335 | 340 | 345 |
| Ser | Gly | His | Gln | Lys | Pro | Gly | Thr | Thr | Lys | Ala | Thr | Ala | Glu | | 350 | 355 | |

<210> 46
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 46
 tgggctgtgt cctcatgg 18

<210> 47
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 47
 tttccagcgc caattctc 18

<210> 48

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 48
agttcttgga ctgtgatagc cac 23

<210> 49
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 49
aaacttggtt gtcctcagtg gctg 24

<210> 50
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 50
gtgagggacc tgtctgcact gaggagagca gctgccacac ggagg 45

<210> 51
<211> 2181
<212> DNA
<213> Homo sapiens

<400> 51
cccacgcgtc cgcccacgcg tccgcccacg ggtccgcca cgcgccggg 50
ccaccagaag tttgagcctc tttggtagca ggaggctgga agaaaggaca 100
gaagtagctc tggctgtgat ggggatctta ctgggcctgc tactcctggg 150
gcacctaaac gtggacactt atggccgtcc catcctggaa gtgccagaga 200
gtgtaacagg accttggaac ggggatgtga atcttcctg cacctatgac 250
cccctgcaag gctacacca agtcttggtg aagtggctgg tacaacgtgg 300
ctcagaccct gtcaccatct ttctacgtga ctcttctgga gaccatatcc 350
agcaggcaaa gtaccagggc cgcctgcatg tgagccacaa gggtccagga 400
gatgtatccc tccaattgag caccctggag atggatgacc ggagccacta 450
cacgtgtgaa gtcacctggc agactcctga tggcaaccaa gtcgtgagag 500

ataagattac tgagctccgt gtccagaaac tctctgtctc caagcccaca 550
gtgacaactg gcagcgggta tggcttcacg gtgccccagg gaatgaggat 600
tagccttcaa tgccaggctc ggggttctcc tcccatcagt tatatttggt 650
ataagcaaca gactaataac caggaaccca tcaaagtagc aaccctaagt 700
accttactct tcaagcctgc ggtgatagcc gactcaggct cctatttctg 750
cactgccaag ggccagggtg gctctgagca gcacagcgac attgtgaagt 800
ttgtgggtcaa agactcctca aagctactca agaccaagac tgaggcacct 850
acaaccatga cataccccctt gaaagcaaca tctacagtga agcagtcctg 900
ggactggacc actgacatgg atggctacct tggagagacc agtgctgggc 950
caggaaagag cctgcctgtc tttgccatca tcctcatcat ctcttgtgc 1000
tgtatgggtg tttttacat ggctatatc atgctctgtc ggaagacatc 1050
ccaacaagag catgtctacg aagcagccag gtaagaaagt ctctcctctt 1100
ccatttttga ccccgccct gccctcaatt ttgattactg gcaggaaatg 1150
tggaggaagg ggggtgtggc acagacccaa tcctaaggcc ggaggccttc 1200
agggtcagga catagctgcc ttcctctctc caggcacctt ctgaggttgt 1250
tttggccctc tgaacacaaa ggataattta gatccatctg ccttctgctt 1300
ccagaatccc tgggtggtag gatcctgata attaattggc aagaattgag 1350
gcagaagggt gggaaaccag gaccacagcc ccaagtcctt tcttatgggt 1400
ggtgggctct tgggccatag ggcacatgcc agagaggcca acgactctgg 1450
agaaaccatg aggggtggcca tcttcgcaag tggctgctcc agtgatgagc 1500
caacttccca gaatctgggc aacaactact ctgatgagcc ctgcatagga 1550
caggagtacc agatcatcgc ccagatcaat ggcaactacg cccgcctgct 1600
ggacacagtt cctctggatt atgagtttct ggccactgag ggcaaaagt 1650
tctgttaaaa atgccccatt aggccaggat ctgctgacat aattgcctag 1700
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ctttgccctg gaatttgcca gatgcatctc aagtaagcca gctgctggat 1850
ttggctctgg gcccttctag tatctctgcc gggggcttct ggtactcctc 1900

tctaaatacc agaggaaga tgcccatagc actaggactt ggcatcatg 1950
 cctacagaca ctattcaact ttggcatctt gccaccagaa gacccgaggg 2000
 aggctcagct ctgccagctc agaggaccag ctatatccag gatcatttct 2050
 ctttcttcag ggccagacag cttttaattg aaattgttat ttcacaggcc 2100
 agggttcagt tctgctcctc cactataagt ctaatgttct gactctctcc 2150
 tgggtgctcaa taaatatcta atcataacag c 2181

<210> 52
 <211> 321
 <212> PRT
 <213> Homo sapiens

<400> 52
 Met Gly Ile Leu Leu Gly Leu Leu Leu Leu Gly His Leu Thr Val
 1 5 10 15
 Asp Thr Tyr Gly Arg Pro Ile Leu Glu Val Pro Glu Ser Val Thr
 20 25 30
 Gly Pro Trp Lys Gly Asp Val Asn Leu Pro Cys Thr Tyr Asp Pro
 35 40 45
 Leu Gln Gly Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg
 50 55 60
 Gly Ser Asp Pro Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp
 65 70 75
 His Ile Gln Gln Ala Lys Tyr Gln Gly Arg Leu His Val Ser His
 80 85 90
 Lys Val Pro Gly Asp Val Ser Leu Gln Leu Ser Thr Leu Glu Met
 95 100 105
 Asp Asp Arg Ser His Tyr Thr Cys Glu Val Thr Trp Gln Thr Pro
 110 115 120
 Asp Gly Asn Gln Val Val Arg Asp Lys Ile Thr Glu Leu Arg Val
 125 130 135
 Gln Lys Leu Ser Val Ser Lys Pro Thr Val Thr Thr Gly Ser Gly
 140 145 150
 Tyr Gly Phe Thr Val Pro Gln Gly Met Arg Ile Ser Leu Gln Cys
 155 160 165
 Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile Trp Tyr Lys Gln
 170 175 180
 Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr Leu Ser Thr
 185 190 195

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Phe | Lys | Pro | Ala | Val | Ile | Ala | Asp | Ser | Gly | Ser | Tyr | Phe | 200 | 205 | 210 |
| Cys | Thr | Ala | Lys | Gly | Gln | Val | Gly | Ser | Glu | Gln | His | Ser | Asp | Ile | 215 | 220 | 225 |
| Val | Lys | Phe | Val | Val | Lys | Asp | Ser | Ser | Lys | Leu | Leu | Lys | Thr | Lys | 230 | 235 | 240 |
| Thr | Glu | Ala | Pro | Thr | Thr | Met | Thr | Tyr | Pro | Leu | Lys | Ala | Thr | Ser | 245 | 250 | 255 |
| Thr | Val | Lys | Gln | Ser | Trp | Asp | Trp | Thr | Thr | Asp | Met | Asp | Gly | Tyr | 260 | 265 | 270 |
| Leu | Gly | Glu | Thr | Ser | Ala | Gly | Pro | Gly | Lys | Ser | Leu | Pro | Val | Phe | 275 | 280 | 285 |
| Ala | Ile | Ile | Leu | Ile | Ile | Ser | Leu | Cys | Cys | Met | Val | Val | Phe | Thr | 290 | 295 | 300 |
| Met | Ala | Tyr | Ile | Met | Leu | Cys | Arg | Lys | Thr | Ser | Gln | Gln | Glu | His | 305 | 310 | 315 |
| Val | Tyr | Glu | Ala | Ala | Arg | | | | | | | | | | 320 | | |

<210> 53
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 53
 tatccctcca attgagcacc ctgg 24

<210> 54
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 54
 gtcggaagac atcccaacaa g 21

<210> 55
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 55
cttcacaatg tcgctgtgct gctc 24

<210> 56
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 56
agccaaatcc agcagctggc ttac 24

<210> 57
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 57
tggatgaccg gagccactac acgtgtgaag tcacctggca gactcctgat 50

<210> 58
<211> 2458
<212> DNA
<213> Homo sapiens

<400> 58
gcgccgggag cccatctgcc cccaggggca cggggcgcg ggccggctcc 50
cgcccggcac atggctgcag ccacctcgcg cgcacccoga ggccgctgcg 100
ccagctcgcc cgaggtccgt cggaggcgcc cggccgcccc ggagccaagc 150
agcaactgag cggggaagcg cccgcgtccg gggatcgggg tgtccctcct 200
ccttctctc ttgctagttt cctactatgt tggaaccttg gggactcaca 250
ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccacat 300
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 <213> Homo sapiens

<400> 59
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 35 40 45
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 50 55 60
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 80 85 90
 Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp
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 Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val
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 Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro
 125 130 135
 Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr
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 Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr
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 Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro

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| Pro | Lys | Ser | Arg | Ile | Asp | Tyr | Asn | His | Pro | Gly | Arg | Val | Leu | Leu | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Gln | Asn | Leu | Thr | Met | Ser | Tyr | Ser | Gly | Leu | Tyr | Gln | Cys | Thr | Ala | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
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| Gln | Tyr | Val | Gln | Ser | Ile | Gly | Met | Val | Ala | Gly | Ala | Val | Thr | Gly | | | | | |
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| Ile | Val | Ala | Gly | Ala | Leu | Leu | Ile | Phe | Leu | Leu | Val | Trp | Leu | Leu | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ile | Arg | Arg | Lys | Asp | Lys | Glu | Arg | Tyr | Glu | Glu | Glu | Glu | Arg | Pro | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Asn | Glu | Ile | Arg | Glu | Asp | Ala | Glu | Ala | Pro | Lys | Ala | Arg | Leu | Val | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Lys | Pro | Ser | Ser | Ser | Ser | Ser | Gly | Ser | Arg | Ser | Ser | Arg | Ser | Gly | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ser | Ser | Ser | Thr | Arg | Ser | Thr | Ala | Asn | Ser | Ala | Ser | Arg | Ser | Gln | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Arg | Thr | Leu | Ser | Thr | Asp | Ala | Ala | Pro | Gln | Pro | Gly | Leu | Ala | Thr | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Gln | Ala | Tyr | Ser | Leu | Val | Gly | Pro | Glu | Val | Arg | Gly | Ser | Glu | Pro | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Lys | Lys | Val | His | His | Ala | Asn | Leu | Thr | Lys | Ala | Glu | Thr | Thr | Pro | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Ser | Met | Ile | Pro | Ser | Gln | Ser | Arg | Ala | Phe | Gln | Thr | Val | | | | | | | |
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<223> Synthetic oligonucleotide probe

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<210> 61

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 61

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<211> 43

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<223> Synthetic oligonucleotide probe

<400> 62

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<210> 63

<211> 3534

<212> DNA

<213> Homo sapiens

<400> 63

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<211> 655

<212> PRT

<213> Homo sapiens

<400> 64

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| Met | Gly | Thr | Ser | Pro | Ser | Ser | Ser | Thr | Ala | Leu | Ala | Ser | Cys | Ser | 1 | 5 | 10 | 15 |
| Arg | Ile | Ala | Arg | Arg | Ala | Thr | Ala | Thr | Met | Ile | Ala | Gly | Ser | Leu | 20 | 25 | 30 | |
| Leu | Leu | Leu | Gly | Phe | Leu | Ser | Thr | Thr | Thr | Ala | Gln | Pro | Glu | Gln | 35 | 40 | 45 | |
| Lys | Ala | Ser | Asn | Leu | Ile | Gly | Thr | Tyr | Arg | His | Val | Asp | Arg | Ala | 50 | 55 | 60 | |
| Thr | Gly | Gln | Val | Leu | Thr | Cys | Asp | Lys | Cys | Pro | Ala | Gly | Thr | Tyr | 65 | 70 | 75 | |
| Val | Ser | Glu | His | Cys | Thr | Asn | Thr | Ser | Leu | Arg | Val | Cys | Ser | Ser | 80 | 85 | 90 | |
| Cys | Pro | Val | Gly | Thr | Phe | Thr | Arg | His | Glu | Asn | Gly | Ile | Glu | Lys | 95 | 100 | 105 | |
| Cys | His | Asp | Cys | Ser | Gln | Pro | Cys | Pro | Trp | Pro | Met | Ile | Glu | Lys | 110 | 115 | 120 | |
| Leu | Pro | Cys | Ala | Ala | Leu | Thr | Asp | Arg | Glu | Cys | Thr | Cys | Pro | Pro | 125 | 130 | 135 | |
| Gly | Met | Phe | Gln | Ser | Asn | Ala | Thr | Cys | Ala | Pro | His | Thr | Val | Cys | 140 | 145 | 150 | |
| Pro | Val | Gly | Trp | Gly | Val | Arg | Lys | Lys | Gly | Thr | Glu | Thr | Glu | Asp | 155 | 160 | 165 | |
| Val | Arg | Cys | Lys | Gln | Cys | Ala | Arg | Gly | Thr | Phe | Ser | Asp | Val | Pro | 170 | 175 | 180 | |
| Ser | Ser | Val | Met | Lys | Cys | Lys | Ala | Tyr | Thr | Asp | Cys | Leu | Ser | Gln | 185 | 190 | 195 | |
| Asn | Leu | Val | Val | Ile | Lys | Pro | Gly | Thr | Lys | Glu | Thr | Asp | Asn | Val | 200 | 205 | 210 | |
| Cys | Gly | Thr | Leu | Pro | Ser | Phe | Ser | Ser | Ser | Thr | Ser | Pro | Ser | Pro | 215 | 220 | 225 | |
| Gly | Thr | Ala | Ile | Phe | Pro | Arg | Pro | Glu | His | Met | Glu | Thr | His | Glu | 230 | 235 | 240 | |
| Val | Pro | Ser | Ser | Thr | Tyr | Val | Pro | Lys | Gly | Met | Asn | Ser | Thr | Glu | 245 | 250 | 255 | |
| Ser | Asn | Ser | Ser | Ala | Ser | Val | Arg | Pro | Lys | Val | Leu | Ser | Ser | Ile | 260 | 265 | 270 | |
| Gln | Glu | Gly | Thr | Val | Pro | Asp | Asn | Thr | Ser | Ser | Ala | Arg | Gly | Lys | 275 | 280 | 285 | |

| | | | |
|---|-----|-----|-----|
| Glu Asp Val Asn Lys Thr Leu Pro Asn Leu Gln Val Val Asn His | 290 | 295 | 300 |
| Gln Gln Gly Pro His His Arg His Ile Leu Lys Leu Leu Pro Ser | 305 | 310 | 315 |
| Met Glu Ala Thr Gly Gly Glu Lys Ser Ser Thr Pro Ile Lys Gly | 320 | 325 | 330 |
| Pro Lys Arg Gly His Pro Arg Gln Asn Leu His Lys His Phe Asp | 335 | 340 | 345 |
| Ile Asn Glu His Leu Pro Trp Met Ile Val Leu Phe Leu Leu Leu | 350 | 355 | 360 |
| Val Leu Val Val Ile Val Val Cys Ser Ile Arg Lys Ser Ser Arg | 365 | 370 | 375 |
| Thr Leu Lys Lys Gly Pro Arg Gln Asp Pro Ser Ala Ile Val Glu | 380 | 385 | 390 |
| Lys Ala Gly Leu Lys Lys Ser Met Thr Pro Thr Gln Asn Arg Glu | 395 | 400 | 405 |
| Lys Trp Ile Tyr Tyr Cys Asn Gly His Gly Ile Asp Ile Leu Lys | 410 | 415 | 420 |
| Leu Val Ala Ala Gln Val Gly Ser Gln Trp Lys Asp Ile Tyr Gln | 425 | 430 | 435 |
| Phe Leu Cys Asn Ala Ser Glu Arg Glu Val Ala Ala Phe Ser Asn | 440 | 445 | 450 |
| Gly Tyr Thr Ala Asp His Glu Arg Ala Tyr Ala Ala Leu Gln His | 455 | 460 | 465 |
| Trp Thr Ile Arg Gly Pro Glu Ala Ser Leu Ala Gln Leu Ile Ser | 470 | 475 | 480 |
| Ala Leu Arg Gln His Arg Arg Asn Asp Val Val Glu Lys Ile Arg | 485 | 490 | 495 |
| Gly Leu Met Glu Asp Thr Thr Gln Leu Glu Thr Asp Lys Leu Ala | 500 | 505 | 510 |
| Leu Pro Met Ser Pro Ser Pro Leu Ser Pro Ser Pro Ile Pro Ser | 515 | 520 | 525 |
| Pro Asn Ala Lys Leu Glu Asn Ser Ala Leu Leu Thr Val Glu Pro | 530 | 535 | 540 |
| Ser Pro Gln Asp Lys Asn Lys Gly Phe Phe Val Asp Glu Ser Glu | 545 | 550 | 555 |
| Pro Leu Leu Arg Cys Asp Ser Thr Ser Ser Gly Ser Ser Ala Leu | 560 | 565 | 570 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Asn | Gly | Ser | Phe | Ile | Thr | Lys | Glu | Lys | Lys | Asp | Thr | Val |
| | | | | 575 | | | | | 580 | | | | | 585 |
| | | | | | | | | | | | | | | |
| Leu | Arg | Gln | Val | Arg | Leu | Asp | Pro | Cys | Asp | Leu | Gln | Pro | Ile | Phe |
| | | | | 590 | | | | | 595 | | | | | 600 |
| | | | | | | | | | | | | | | |
| Asp | Asp | Met | Leu | His | Phe | Leu | Asn | Pro | Glu | Glu | Leu | Arg | Val | Ile |
| | | | | 605 | | | | | 610 | | | | | 615 |
| | | | | | | | | | | | | | | |
| Glu | Glu | Ile | Pro | Gln | Ala | Glu | Asp | Lys | Leu | Asp | Arg | Leu | Phe | Glu |
| | | | | 620 | | | | | 625 | | | | | 630 |
| | | | | | | | | | | | | | | |
| Ile | Ile | Gly | Val | Lys | Ser | Gln | Glu | Ala | Ser | Gln | Thr | Leu | Leu | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
| | | | | | | | | | | | | | | |
| Ser | Val | Tyr | Ser | His | Leu | Pro | Asp | Leu | Leu | | | | | |
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<400> 65

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<210> 66

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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accgcacatc ctcaagtctct gtcc 24

<210> 67

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<213> Homo sapiens

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<211> 453

<212> PRT

<213> Homo sapiens

<400> 69

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Glu | Asn | Asp | Pro | Pro | Ala | Val | Glu | Ala | Pro | Phe | Ser | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Leu | Phe | Gly | Leu | Asp | Asp | Leu | Lys | Ile | Ser | Pro | Val | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Asp | Ala | Asp | Ala | Val | Ala | Ala | Gln | Ile | Leu | Ser | Leu | Leu | Pro |
| | | | | 35 | | | | 40 | | | | | | 45 |

Leu Lys Phe Phe Pro Ile Ile Val Ile Gly Ile Ile Ala Leu Ile

| 50 | | | | | | | | | | 55 | | | | | | | | | | 60 | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|
| Leu | Ala | Leu | Ala | Ile | Gly | Leu | Gly | Ile | His | Phe | Asp | Cys | Ser | Gly | | | | | | | | | | | | | | | |
| 65 | | | | | | | | | | 70 | | | | | | | | | | 75 | | | | | | | | | |
| Lys | Tyr | Arg | Cys | Arg | Ser | Ser | Phe | Lys | Cys | Ile | Glu | Leu | Ile | Ala | | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | 85 | | | | | | | | | | 90 | | | | | | | | | |
| Arg | Cys | Asp | Gly | Val | Ser | Asp | Cys | Lys | Asp | Gly | Glu | Asp | Glu | Tyr | | | | | | | | | | | | | | | |
| 95 | | | | | | | | | | 100 | | | | | | | | | | 105 | | | | | | | | | |
| Arg | Cys | Val | Arg | Val | Gly | Gly | Gln | Asn | Ala | Val | Leu | Gln | Val | Phe | | | | | | | | | | | | | | | |
| 110 | | | | | | | | | | 115 | | | | | | | | | | 120 | | | | | | | | | |
| Thr | Ala | Ala | Ser | Trp | Lys | Thr | Met | Cys | Ser | Asp | Asp | Trp | Lys | Gly | | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | 130 | | | | | | | | | | 135 | | | | | | | | | |
| His | Tyr | Ala | Asn | Val | Ala | Cys | Ala | Gln | Leu | Gly | Phe | Pro | Ser | Tyr | | | | | | | | | | | | | | | |
| 140 | | | | | | | | | | 145 | | | | | | | | | | 150 | | | | | | | | | |
| Val | Ser | Ser | Asp | Asn | Leu | Arg | Val | Ser | Ser | Leu | Glu | Gly | Gln | Phe | | | | | | | | | | | | | | | |
| 155 | | | | | | | | | | 160 | | | | | | | | | | 165 | | | | | | | | | |
| Arg | Glu | Glu | Phe | Val | Ser | Ile | Asp | His | Leu | Leu | Pro | Asp | Asp | Lys | | | | | | | | | | | | | | | |
| 170 | | | | | | | | | | 175 | | | | | | | | | | 180 | | | | | | | | | |
| Val | Thr | Ala | Leu | His | His | Ser | Val | Tyr | Val | Arg | Glu | Gly | Cys | Ala | | | | | | | | | | | | | | | |
| 185 | | | | | | | | | | 190 | | | | | | | | | | 195 | | | | | | | | | |
| Ser | Gly | His | Val | Val | Thr | Leu | Gln | Cys | Thr | Ala | Cys | Gly | His | Arg | | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | 205 | | | | | | | | | | 210 | | | | | | | | | |
| Arg | Gly | Tyr | Ser | Ser | Arg | Ile | Val | Gly | Gly | Asn | Met | Ser | Leu | Leu | | | | | | | | | | | | | | | |
| 215 | | | | | | | | | | 220 | | | | | | | | | | 225 | | | | | | | | | |
| Ser | Gln | Trp | Pro | Trp | Gln | Ala | Ser | Leu | Gln | Phe | Gln | Gly | Tyr | His | | | | | | | | | | | | | | | |
| 230 | | | | | | | | | | 235 | | | | | | | | | | 240 | | | | | | | | | |
| Leu | Cys | Gly | Gly | Ser | Val | Ile | Thr | Pro | Leu | Trp | Ile | Ile | Thr | Ala | | | | | | | | | | | | | | | |
| 245 | | | | | | | | | | 250 | | | | | | | | | | 255 | | | | | | | | | |
| Ala | His | Cys | Val | Tyr | Asp | Leu | Tyr | Leu | Pro | Lys | Ser | Trp | Thr | Ile | | | | | | | | | | | | | | | |
| 260 | | | | | | | | | | 265 | | | | | | | | | | 270 | | | | | | | | | |
| Gln | Val | Gly | Leu | Val | Ser | Leu | Leu | Asp | Asn | Pro | Ala | Pro | Ser | His | | | | | | | | | | | | | | | |
| 275 | | | | | | | | | | 280 | | | | | | | | | | 285 | | | | | | | | | |
| Leu | Val | Glu | Lys | Ile | Val | Tyr | His | Ser | Lys | Tyr | Lys | Pro | Lys | Arg | | | | | | | | | | | | | | | |
| 290 | | | | | | | | | | 295 | | | | | | | | | | 300 | | | | | | | | | |
| Leu | Gly | Asn | Asp | Ile | Ala | Leu | Met | Lys | Leu | Ala | Gly | Pro | Leu | Thr | | | | | | | | | | | | | | | |
| 305 | | | | | | | | | | 310 | | | | | | | | | | 315 | | | | | | | | | |
| Phe | Asn | Glu | Met | Ile | Gln | Pro | Val | Cys | Leu | Pro | Asn | Ser | Glu | Glu | | | | | | | | | | | | | | | |
| 320 | | | | | | | | | | 325 | | | | | | | | | | 330 | | | | | | | | | |
| Asn | Phe | Pro | Asp | Gly | Lys | Val | Cys | Trp | Thr | Ser | Gly | Trp | Gly | Ala | | | | | | | | | | | | | | | |

| 335 | | | | | | | | | | 340 | | | | | 345 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Thr | Glu | Asp | Gly | Gly | Asp | Ala | Ser | Pro | Val | Leu | Asn | His | Ala | Ala | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Val | Pro | Leu | Ile | Ser | Asn | Lys | Ile | Cys | Asn | His | Arg | Asp | Val | Tyr | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Gly | Gly | Ile | Ile | Ser | Pro | Ser | Met | Leu | Cys | Ala | Gly | Tyr | Leu | Thr | | | | | |
| | | | | 380 | | | | | 385 | | | | | 390 | | | | | |
| Gly | Gly | Val | Asp | Ser | Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Cys | Gln | Glu | Arg | Arg | Leu | Trp | Lys | Leu | Val | Gly | Ala | Thr | Ser | Phe | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Gly | Ile | Gly | Cys | Ala | Glu | Val | Asn | Lys | Pro | Gly | Val | Tyr | Thr | Arg | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Val | Thr | Ser | Phe | Leu | Asp | Trp | Ile | His | Glu | Gln | Met | Glu | Arg | Asp | | | | | |
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Leu Lys Thr

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 <223> Synthetic oligonucleotide probe

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<400> 71
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<210> 72
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<400> 72

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<211> 3305

<212> DNA

<213> Homo sapiens

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<211> 735

<212> PRT

<213> Homo sapiens

<400> 74

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| Met | Ala | Ala | Arg | Pro | Leu | Pro | Val | Ser | Pro | Ala | Arg | Ala | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Ala | Leu | Ala | Gly | Ala | Leu | Leu | Ala | Pro | Cys | Glu | Ala | Arg | Gly | 20 | 25 | 30 | |
| Val | Ser | Leu | Trp | Asn | Gln | Gly | Arg | Ala | Asp | Glu | Val | Val | Ser | Ala | 35 | 40 | 45 | |
| Ser | Val | Arg | Ser | Gly | Asp | Leu | Trp | Ile | Pro | Val | Lys | Ser | Phe | Asp | 50 | 55 | 60 | |
| Ser | Lys | Asn | His | Pro | Glu | Val | Leu | Asn | Ile | Arg | Leu | Gln | Arg | Glu | 65 | 70 | 75 | |
| Ser | Lys | Glu | Leu | Ile | Ile | Asn | Leu | Glu | Arg | Asn | Glu | Gly | Leu | Ile | 80 | 85 | 90 | |
| Ala | Ser | Ser | Phe | Thr | Glu | Thr | His | Tyr | Leu | Gln | Asp | Gly | Thr | Asp | 95 | 100 | 105 | |
| Val | Ser | Leu | Ala | Arg | Asn | Tyr | Thr | Gly | His | Cys | Tyr | Tyr | His | Gly | 110 | 115 | 120 | |

| | | | |
|---|-----|-----|-----|
| His Val Arg Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys | 125 | 130 | 135 |
| Ser Gly Leu Arg Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val | 140 | 145 | 150 |
| Leu Glu Pro Met Lys Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro | 155 | 160 | 165 |
| Ala Lys Lys Leu Lys Ser Val Arg Gly Ser Cys Gly Ser His His | 170 | 175 | 180 |
| Asn Thr Pro Asn Leu Ala Ala Lys Asn Val Phe Pro Pro Pro Ser | 185 | 190 | 195 |
| Gln Thr Trp Ala Arg Arg His Lys Arg Glu Thr Leu Lys Ala Thr | 200 | 205 | 210 |
| Lys Tyr Val Glu Leu Val Ile Val Ala Asp Asn Arg Glu Phe Gln | 215 | 220 | 225 |
| Arg Gln Gly Lys Asp Leu Glu Lys Val Lys Gln Arg Leu Ile Glu | 230 | 235 | 240 |
| Ile Ala Asn His Val Asp Lys Phe Tyr Arg Pro Leu Asn Ile Arg | 245 | 250 | 255 |
| Ile Val Leu Val Gly Val Glu Val Trp Asn Asp Met Asp Lys Cys | 260 | 265 | 270 |
| Ser Val Ser Gln Asp Pro Phe Thr Ser Leu His Glu Phe Leu Asp | 275 | 280 | 285 |
| Trp Arg Lys Met Lys Leu Leu Pro Arg Lys Ser His Asp Asn Ala | 290 | 295 | 300 |
| Gln Leu Val Ser Gly Val Tyr Phe Gln Gly Thr Thr Ile Gly Met | 305 | 310 | 315 |
| Ala Pro Ile Met Ser Met Cys Thr Ala Asp Gln Ser Gly Gly Ile | 320 | 325 | 330 |
| Val Met Asp His Ser Asp Asn Pro Leu Gly Ala Ala Val Thr Leu | 335 | 340 | 345 |
| Ala His Glu Leu Gly His Asn Phe Gly Met Asn His Asp Thr Leu | 350 | 355 | 360 |
| Asp Arg Gly Cys Ser Cys Gln Met Ala Val Glu Lys Gly Gly Cys | 365 | 370 | 375 |
| Ile Met Asn Ala Ser Thr Gly Tyr Pro Phe Pro Met Val Phe Ser | 380 | 385 | 390 |
| Ser Cys Ser Arg Lys Asp Leu Glu Thr Ser Leu Glu Lys Gly Met | 395 | 400 | 405 |

| | | | |
|---|-----|-----|-----|
| Gly Val Cys Leu Phe Asn Leu Pro Glu Val Arg Glu Ser Phe Gly | 410 | 415 | 420 |
| Gly Gln Lys Cys Gly Asn Arg Phe Val Glu Glu Gly Glu Glu Cys | 425 | 430 | 435 |
| Asp Cys Gly Glu Pro Glu Glu Cys Met Asn Arg Cys Cys Asn Ala | 440 | 445 | 450 |
| Thr Thr Cys Thr Leu Lys Pro Asp Ala Val Cys Ala His Gly Leu | 455 | 460 | 465 |
| Cys Cys Glu Asp Cys Gln Leu Lys Pro Ala Gly Thr Ala Cys Arg | 470 | 475 | 480 |
| Asp Ser Ser Asn Ser Cys Asp Leu Pro Glu Phe Cys Thr Gly Ala | 485 | 490 | 495 |
| Ser Pro His Cys Pro Ala Asn Val Tyr Leu His Asp Gly His Ser | 500 | 505 | 510 |
| Cys Gln Asp Val Asp Gly Tyr Cys Tyr Asn Gly Ile Cys Gln Thr | 515 | 520 | 525 |
| His Glu Gln Gln Cys Val Thr Leu Trp Gly Pro Gly Ala Lys Pro | 530 | 535 | 540 |
| Ala Pro Gly Ile Cys Phe Glu Arg Val Asn Ser Ala Gly Asp Pro | 545 | 550 | 555 |
| Tyr Gly Asn Cys Gly Lys Val Ser Lys Ser Ser Phe Ala Lys Cys | 560 | 565 | 570 |
| Glu Met Arg Asp Ala Lys Cys Gly Lys Ile Gln Cys Gln Gly Gly | 575 | 580 | 585 |
| Ala Ser Arg Pro Val Ile Gly Thr Asn Ala Val Ser Ile Glu Thr | 590 | 595 | 600 |
| Asn Ile Pro Leu Gln Gln Gly Gly Arg Ile Leu Cys Arg Gly Thr | 605 | 610 | 615 |
| His Val Tyr Leu Gly Asp Asp Met Pro Asp Pro Gly Leu Val Leu | 620 | 625 | 630 |
| Ala Gly Thr Lys Cys Ala Asp Gly Lys Ile Cys Leu Asn Arg Gln | 635 | 640 | 645 |
| Cys Gln Asn Ile Ser Val Phe Gly Val His Glu Cys Ala Met Gln | 650 | 655 | 660 |
| Cys His Gly Arg Gly Val Cys Asn Asn Arg Lys Asn Cys His Cys | 665 | 670 | 675 |
| Glu Ala His Trp Ala Pro Pro Phe Cys Asp Lys Phe Gly Phe Gly | 680 | 685 | 690 |

Gly Ser Thr Asp Ser Gly Pro Ile Arg Gln Ala Glu Ala Arg Gln
695 700 705

Glu Ala Ala Glu Ser Asn Arg Glu Arg Gly Gln Gly Gln Glu Pro
710 715 720

Val Gly Ser Gln Glu His Ala Ser Thr Ala Ser Leu Thr Leu Ile
725 730 735

<210> 75

<211> 483

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 30, 94, 143, 156, 163, 179, 193, 369, 371, 381, 390, 473

<223> unknown base

<400> 75

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ttgagntttt tgntaaaaca tggacatgnt tcagtgtctgc tcntgagaga 200

gtagcaggtt accacttttg gcaggcccca gccctgcagc aaggaggaag 250

aggactcaaa agtttggcct ttcactgagc ctccacagca gtgggggaga 300

agcaagggtt gggcccagtg tcccctttcc ccagtgcac ctcagccttg 350

gcagccctga taactggtnt ntggctgcaa nttaatgctn tgatatggct 400

tttagcattt attatatgaa aatagcaggg ttttagtttt taatttatca 450

gagaccctgc caccattcc atntccatcc aag 483

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<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 76

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<210> 77

<211> 18

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<213> Artificial Sequence

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<210> 78
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<400> 80
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<210> 84
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<212> DNA
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atgatctgcc cgcctcggcc tcccaaagtg ctgggattac aggcgagtgc 150
aaccacaccc ggccacaaac tttttaagaa gttaatgaaa ccataccttt 200
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 <213> Homo sapiens

<400> 85
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 20 25 30
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 35 40 45
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 50 55 60
 Ala Leu Leu His Leu Tyr His
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 86
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<210> 87
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<220>
<223> Synthetic oligonucleotide probe

<400> 87
ggtagagatg tagaaggcca agcaagacc 29

<210> 88
<211> 50
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 88
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<210> 89
<211> 2956
<212> DNA
<213> Homo sapiens

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 <211> 432
 <212> PRT
 <213> Homo sapiens

<400> 90
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 20 25 30
 Gly Gly Arg Trp Gly Ala Arg Ala Gln Glu Ala Ala Ala Ala Ala
 35 40 45

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ala Asp Gly Pro | Pro Ala Ala Asp Gly | Glu Asp Gly Gln Asp | Pro |
| 50 | | 55 | 60 |
| His Ser Lys His | Leu Tyr Thr Ala Asp | Met Phe Thr His Gly | Ile |
| 65 | | 70 | 75 |
| Gln Ser Ala Ala | His Phe Val Met Phe | Phe Ala Pro Trp Cys | Gly |
| 80 | | 85 | 90 |
| His Cys Gln Arg | Leu Gln Pro Thr Trp | Asn Asp Leu Gly Asp | Lys |
| 95 | | 100 | 105 |
| Tyr Asn Ser Met | Glu Asp Ala Lys Val | Tyr Val Ala Lys Val | Asp |
| 110 | | 115 | 120 |
| Cys Thr Ala His | Ser Asp Val Cys Ser | Ala Gln Gly Val Arg | Gly |
| 125 | | 130 | 135 |
| Tyr Pro Thr Leu | Lys Leu Phe Lys Pro | Gly Gln Glu Ala Val | Lys |
| 140 | | 145 | 150 |
| Tyr Gln Gly Pro | Arg Asp Phe Gln Thr | Leu Glu Asn Trp Met | Leu |
| 155 | | 160 | 165 |
| Gln Thr Leu Asn | Glu Glu Pro Val Thr | Pro Glu Pro Glu Val | Glu |
| 170 | | 175 | 180 |
| Pro Pro Ser Ala | Pro Glu Leu Lys Gln | Gly Leu Tyr Glu Leu | Ser |
| 185 | | 190 | 195 |
| Ala Ser Asn Phe | Glu Leu His Val Ala | Gln Gly Asp His Phe | Ile |
| 200 | | 205 | 210 |
| Lys Phe Phe Ala | Pro Trp Cys Gly His | Cys Lys Ala Leu Ala | Pro |
| 215 | | 220 | 225 |
| Thr Trp Glu Gln | Leu Ala Leu Gly Leu | Glu His Ser Glu Thr | Val |
| 230 | | 235 | 240 |
| Lys Ile Gly Lys | Val Asp Cys Thr Gln | His Tyr Glu Leu Cys | Ser |
| 245 | | 250 | 255 |
| Gly Asn Gln Val | Arg Gly Tyr Pro Thr | Leu Leu Trp Phe Arg | Asp |
| 260 | | 265 | 270 |
| Gly Lys Lys Val | Asp Gln Tyr Lys Gly | Lys Arg Asp Leu Glu | Ser |
| 275 | | 280 | 285 |
| Leu Arg Glu Tyr | Val Glu Ser Gln Leu | Gln Arg Thr Glu Thr | Gly |
| 290 | | 295 | 300 |
| Ala Thr Glu Thr | Val Thr Pro Ser Glu | Ala Pro Val Leu Ala | Ala |
| 305 | | 310 | 315 |
| Glu Pro Glu Ala | Asp Lys Gly Thr Val | Leu Ala Leu Thr Glu | Asn |
| 320 | | 325 | 330 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Phe | Asp | Asp | Thr | Ile | Ala | Glu | Gly | Ile | Thr | Phe | Ile | Lys | Phe | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Tyr | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Thr | Leu | Ala | Pro | Thr | Trp | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Glu | Glu | Leu | Ser | Lys | Lys | Glu | Phe | Pro | Gly | Leu | Ala | Gly | Val | Lys | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ile | Ala | Glu | Val | Asp | Cys | Thr | Ala | Glu | Arg | Asn | Ile | Cys | Ser | Lys | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Tyr | Ser | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Leu | Phe | Arg | Gly | Gly | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Lys | Lys | Val | Ser | Glu | His | Ser | Gly | Gly | Arg | Asp | Leu | Asp | Ser | Leu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| His | Arg | Phe | Val | Leu | Ser | Gln | Ala | Lys | Asp | Glu | Leu | | | | |
| | | | | 425 | | | | | 430 | | | | | | |

<210> 91
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 91
 atgttcttcg cgccctgggtg 20

<210> 92
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 92
 ccaagccaac acactctaca g 21

<210> 93
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 93
 aagtggtcgc cttgtgcaac gtgc 24

<210> 94
 <211> 23

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 94
ggtcaaaggg gatatatcgc cac 23

<210> 95
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 95
gcatggaaga tgccaaagtc tatgtggcta aagtggactg cacggcca 49

<210> 96
<211> 1016
<212> DNA
<213> Homo sapiens

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gtctggatat tgatagccgt cctaccgctg aagtctgtgc cacacacaca 150
atttcaccag gacccaaagg agatgatggg gaaaaaggag atccaggaga 200
agagggaaaag catggcaaag tgggacgcat ggggccgaaa ggaattaaag 250
gagaactggg tgatatggga gatcagggca atattggcaa gactgggccc 300
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agagtgccat cttaccatgt actttgtctg tgagttcatc aagaagaaaa 850
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 aaaaaaaaaa aaaaaa 1016

<210> 97

<211> 277

<212> PRT

<213> Homo sapiens

<400> 97

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asn | Gly | Phe | Ala | Ser | Leu | Leu | Arg | Arg | Asn | Gln | Phe | Ile | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Leu | Phe | Leu | Leu | Gln | Ile | Gln | Ser | Leu | Gly | Leu | Asp | Ile |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ser | Arg | Pro | Thr | Ala | Glu | Val | Cys | Ala | Thr | His | Thr | Ile | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Gly | Pro | Lys | Gly | Asp | Asp | Gly | Glu | Lys | Gly | Asp | Pro | Gly | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Gly | Lys | His | Gly | Lys | Val | Gly | Arg | Met | Gly | Pro | Lys | Gly | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gly | Glu | Leu | Gly | Asp | Met | Gly | Asp | Gln | Gly | Asn | Ile | Gly | Lys |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gly | Pro | Ile | Gly | Lys | Lys | Gly | Asp | Lys | Gly | Glu | Lys | Gly | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Ile | Pro | Gly | Glu | Lys | Gly | Lys | Ala | Gly | Thr | Val | Cys | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gly | Arg | Tyr | Arg | Lys | Phe | Val | Gly | Gln | Leu | Asp | Ile | Ser | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Leu | Lys | Thr | Ser | Met | Lys | Phe | Val | Lys | Asn | Val | Ile | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ile | Arg | Glu | Thr | Glu | Glu | Lys | Phe | Tyr | Tyr | Ile | Val | Gln | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Lys | Asn | Tyr | Arg | Glu | Ser | Leu | Thr | His | Cys | Arg | Ile | Arg | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Met | Leu | Ala | Met | Pro | Lys | Asp | Glu | Ala | Ala | Asn | Thr | Leu | Ile |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asp | Tyr | Val | Ala | Lys | Ser | Gly | Phe | Phe | Arg | Val | Phe | Ile | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | 200 | 205 | 210 |
|---|-----|-----|-----|
| Val Asn Asp Leu Glu Arg Glu Gly Gln Tyr Met Ser Thr Asp Asn | 215 | 220 | 225 |
| Thr Pro Leu Gln Asn Tyr Ser Asn Trp Asn Glu Gly Glu Pro Ser | 230 | 235 | 240 |
| Asp Pro Tyr Gly His Glu Asp Cys Val Glu Met Leu Ser Ser Gly | 245 | 250 | 255 |
| Arg Trp Asn Asp Thr Glu Cys His Leu Thr Met Tyr Phe Val Cys | 260 | 265 | 270 |
| Glu Phe Ile Lys Lys Lys Lys | 275 | | |

<210> 98

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 98

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<210> 99

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 99

gatgatggag gctccatacc tcag 24

<210> 100

<211> 50

<212> DNA

<213> Artificial Sequence

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<400> 100

gtgttcattg gcgtgaatga ccttgaaagg gagggacagt acatgttcac 50

<210> 101

<211> 2574

<212> DNA

<213> Homo sapiens

<400> 101

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<211> 730

<212> PRT

<213> Homo sapiens

<400> 102

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| Met | Gly | Val | Cys | Gln | Arg | Thr | Arg | Ala | Pro | Trp | Lys | Glu | Lys | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Glu | Arg | Ala | Ala | Leu | Gly | Phe | Arg | Lys | Gly | Gly | Ser | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Ala | Ser | Gly | Trp | Asn | Gln | Thr | Val | Pro | Ile | Glu | Glu | Ala | 35 | 40 | 45 |
| Gly | Ser | Met | Ala | Ala | Leu | Leu | Leu | Leu | Pro | Leu | Leu | Leu | Leu | Leu | 50 | 55 | 60 |
| Pro | Leu | Leu | Leu | Leu | Lys | Leu | His | Leu | Trp | Pro | Gln | Leu | Arg | Trp | 65 | 70 | 75 |
| Leu | Pro | Ala | Asp | Leu | Ala | Phe | Ala | Val | Arg | Ala | Leu | Cys | Cys | Lys | 80 | 85 | 90 |
| Arg | Ala | Leu | Arg | Ala | Arg | Ala | Leu | Ala | Ala | Ala | Ala | Ala | Asp | Pro | 95 | 100 | 105 |
| Glu | Gly | Pro | Glu | Gly | Gly | Cys | Ser | Leu | Ala | Trp | Arg | Leu | Ala | Glu | 110 | 115 | 120 |
| Leu | Ala | Gln | Gln | Arg | Ala | Ala | His | Thr | Phe | Leu | Ile | His | Gly | Ser | 125 | 130 | 135 |
| Arg | Arg | Phe | Ser | Tyr | Ser | Glu | Ala | Glu | Arg | Glu | Ser | Asn | Arg | Ala | 140 | 145 | 150 |
| Ala | Arg | Ala | Phe | Leu | Arg | Ala | Leu | Gly | Trp | Asp | Trp | Gly | Pro | Asp | 155 | 160 | 165 |
| Gly | Gly | Asp | Ser | Gly | Glu | Gly | Ser | Ala | Gly | Glu | Gly | Glu | Arg | Ala | 170 | 175 | 180 |
| Ala | Pro | Gly | Ala | Gly | Asp | Ala | Ala | Ala | Gly | Ser | Gly | Ala | Glu | Phe | 185 | 190 | 195 |
| Ala | Gly | Gly | Asp | Gly | Ala | Ala | Arg | Gly | Gly | Gly | Ala | Ala | Ala | Pro | 200 | 205 | 210 |
| Leu | Ser | Pro | Gly | Ala | Thr | Val | Ala | Leu | Leu | Leu | Pro | Ala | Gly | Pro | 215 | 220 | 225 |
| Glu | Phe | Leu | Trp | Leu | Trp | Phe | Gly | Leu | Ala | Lys | Ala | Gly | Leu | Arg | 230 | 235 | 240 |
| Thr | Ala | Phe | Val | Pro | Thr | Ala | Leu | Arg | Arg | Gly | Pro | Leu | Leu | His | 245 | 250 | 255 |
| Cys | Leu | Arg | Ser | Cys | Gly | Ala | Arg | Ala | Leu | Val | Leu | Ala | Pro | Glu | 260 | 265 | 270 |
| Phe | Leu | Glu | Ser | Leu | Glu | Pro | Asp | Leu | Pro | Ala | Leu | Arg | Ala | Met | 275 | 280 | 285 |
| Gly | Leu | His | Leu | Trp | Ala | Ala | Gly | Pro | Gly | Thr | His | Pro | Ala | Gly | 290 | 295 | 300 |
| Ile | Ser | Asp | Leu | Leu | Ala | Glu | Val | Ser | Ala | Glu | Val | Asp | Gly | Pro | 305 | 310 | 315 |

| | | | | |
|-----------------|---|-----|-----|-----|
| Val Pro Gly Tyr | Leu Ser Ser Pro Gln Ser Ile Thr Asp Thr Cys | 320 | 325 | 330 |
| Leu Tyr Ile Phe | Thr Ser Gly Thr Thr Gly Leu Pro Lys Ala Ala | 335 | 340 | 345 |
| Arg Ile Ser His | Leu Lys Ile Leu Gln Cys Gln Gly Phe Tyr Gln | 350 | 355 | 360 |
| Leu Cys Gly Val | His Gln Glu Asp Val Ile Tyr Leu Ala Leu Pro | 365 | 370 | 375 |
| Leu Tyr His Met | Ser Gly Ser Leu Leu Gly Ile Val Gly Cys Met | 380 | 385 | 390 |
| Gly Ile Gly Ala | Thr Val Val Leu Lys Ser Lys Phe Ser Ala Gly | 395 | 400 | 405 |
| Gln Phe Trp Glu | Asp Cys Gln Gln His Arg Val Thr Val Phe Gln | 410 | 415 | 420 |
| Tyr Ile Gly Glu | Leu Cys Arg Tyr Leu Val Asn Gln Pro Pro Ser | 425 | 430 | 435 |
| Lys Ala Glu Arg | Gly His Lys Val Arg Leu Ala Val Gly Ser Gly | 440 | 445 | 450 |
| Leu Arg Pro Asp | Thr Trp Glu Arg Phe Val Arg Arg Phe Gly Pro | 455 | 460 | 465 |
| Leu Gln Val Leu | Glu Thr Tyr Gly Leu Thr Glu Gly Asn Val Ala | 470 | 475 | 480 |
| Thr Ile Asn Tyr | Thr Gly Gln Arg Gly Ala Val Gly Arg Ala Ser | 485 | 490 | 495 |
| Trp Leu Tyr Lys | His Ile Phe Pro Phe Ser Leu Ile Arg Tyr Asp | 500 | 505 | 510 |
| Val Thr Thr Gly | Glu Pro Ile Arg Asp Pro Gln Gly His Cys Met | 515 | 520 | 525 |
| Ala Thr Ser Pro | Gly Glu Pro Gly Leu Leu Val Ala Pro Val Ser | 530 | 535 | 540 |
| Gln Gln Ser Pro | Phe Leu Gly Tyr Ala Gly Gly Pro Glu Leu Ala | 545 | 550 | 555 |
| Gln Gly Lys Leu | Leu Lys Asp Val Phe Arg Pro Gly Asp Val Phe | 560 | 565 | 570 |
| Phe Asn Thr Gly | Asp Leu Leu Val Cys Asp Asp Gln Gly Phe Leu | 575 | 580 | 585 |
| Arg Phe His Asp | Arg Thr Gly Asp Thr Phe Arg Trp Lys Gly Glu | 590 | 595 | 600 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asn | Val | Ala | Thr | Thr | Glu | Val | Ala | Glu | Val | Phe | Glu | Ala | Leu | Asp | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Phe | Leu | Gln | Glu | Val | Asn | Val | Tyr | Gly | Val | Thr | Val | Pro | Gly | His | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Glu | Gly | Arg | Ala | Gly | Met | Ala | Ala | Leu | Val | Leu | Arg | Pro | Pro | His | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Ala | Leu | Asp | Leu | Met | Gln | Leu | Tyr | Thr | His | Val | Ser | Glu | Asn | Leu | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Pro | Pro | Tyr | Ala | Arg | Pro | Arg | Phe | Leu | Arg | Leu | Gln | Glu | Ser | Leu | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Ala | Thr | Thr | Glu | Thr | Phe | Lys | Gln | Gln | Lys | Val | Arg | Met | Ala | Asn | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Glu | Gly | Phe | Asp | Pro | Ser | Thr | Leu | Ser | Asp | Pro | Leu | Tyr | Val | Leu | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Asp | Gln | Ala | Val | Gly | Ala | Tyr | Leu | Pro | Leu | Thr | Thr | Ala | Arg | Tyr | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Ser | Ala | Leu | Leu | Ala | Gly | Asn | Leu | Arg | Ile | | | | | | |
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<211> 555

<212> PRT

<213> Homo sapiens

<400> 109

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Pro | Ser | Trp | Ile | Gly | Ala | Val | Ile | Leu | Pro | Leu | Leu | Gly | Leu | 1 | 5 | 10 | 15 |
| Leu | Leu | Ser | Leu | Pro | Ala | Gly | Ala | Asp | Val | Lys | Ala | Arg | Ser | Cys | 20 | 25 | 30 | |
| Gly | Glu | Val | Arg | Gln | Ala | Tyr | Gly | Ala | Lys | Gly | Phe | Ser | Leu | Ala | 35 | 40 | 45 | |
| Asp | Ile | Pro | Tyr | Gln | Glu | Ile | Ala | Gly | Glu | His | Leu | Arg | Ile | Cys | 50 | 55 | 60 | |
| Pro | Gln | Glu | Tyr | Thr | Cys | Cys | Thr | Thr | Glu | Met | Glu | Asp | Lys | Leu | 65 | 70 | 75 | |
| Ser | Gln | Gln | Ser | Lys | Leu | Glu | Phe | Glu | Asn | Leu | Val | Glu | Glu | Thr | 80 | 85 | 90 | |
| Ser | His | Phe | Val | Arg | Thr | Thr | Phe | Val | Ser | Arg | His | Lys | Lys | Phe | 95 | 100 | 105 | |
| Asp | Glu | Phe | Phe | Arg | Glu | Leu | Leu | Glu | Asn | Ala | Glu | Lys | Ser | Leu | 110 | 115 | 120 | |
| Asn | Asp | Met | Phe | Val | Arg | Thr | Tyr | Gly | Met | Leu | Tyr | Met | Gln | Asn | 125 | 130 | 135 | |
| Ser | Glu | Val | Phe | Gln | Asp | Leu | Phe | Thr | Glu | Leu | Lys | Arg | Tyr | Tyr | 140 | 145 | 150 | |

| | | | |
|---|-----|-----|-----|
| Thr Gly Gly Asn Val Asn Leu Glu Glu Met Leu Asn Asp Phe Trp | 155 | 160 | 165 |
| Ala Arg Leu Leu Glu Arg Met Phe Gln Leu Ile Asn Pro Gln Tyr | 170 | 175 | 180 |
| His Phe Ser Glu Asp Tyr Leu Glu Cys Val Ser Lys Tyr Thr Asp | 185 | 190 | 195 |
| Gln Leu Lys Pro Phe Gly Asp Val Pro Arg Lys Leu Lys Ile Gln | 200 | 205 | 210 |
| Val Thr Arg Ala Phe Ile Ala Ala Arg Thr Phe Val Gln Gly Leu | 215 | 220 | 225 |
| Thr Val Gly Arg Glu Val Ala Asn Arg Val Ser Lys Val Ser Pro | 230 | 235 | 240 |
| Thr Pro Gly Cys Ile Arg Ala Leu Met Lys Met Leu Tyr Cys Pro | 245 | 250 | 255 |
| Tyr Cys Arg Gly Leu Pro Thr Val Arg Pro Cys Asn Asn Tyr Cys | 260 | 265 | 270 |
| Leu Asn Val Met Lys Gly Cys Leu Ala Asn Gln Ala Asp Leu Asp | 275 | 280 | 285 |
| Thr Glu Trp Asn Leu Phe Ile Asp Ala Met Leu Leu Val Ala Glu | 290 | 295 | 300 |
| Arg Leu Glu Gly Pro Phe Asn Ile Glu Ser Val Met Asp Pro Ile | 305 | 310 | 315 |
| Asp Val Lys Ile Ser Glu Ala Ile Met Asn Met Gln Glu Asn Ser | 320 | 325 | 330 |
| Met Gln Val Ser Ala Lys Val Phe Gln Gly Cys Gly Gln Pro Lys | 335 | 340 | 345 |
| Pro Ala Pro Ala Leu Arg Ser Ala Arg Ser Ala Pro Glu Asn Phe | 350 | 355 | 360 |
| Asn Thr Arg Phe Arg Pro Tyr Asn Pro Glu Glu Arg Pro Thr Thr | 365 | 370 | 375 |
| Ala Ala Gly Thr Ser Leu Asp Arg Leu Val Thr Asp Ile Lys Glu | 380 | 385 | 390 |
| Lys Leu Lys Leu Ser Lys Lys Val Trp Ser Ala Leu Pro Tyr Thr | 395 | 400 | 405 |
| Ile Cys Lys Asp Glu Ser Val Thr Ala Gly Thr Ser Asn Glu Glu | 410 | 415 | 420 |
| Glu Cys Trp Asn Gly His Ser Lys Ala Arg Tyr Leu Pro Glu Ile | 425 | 430 | 435 |

| | | |
|---|-----|-----|
| Met Asn Asp Gly Leu Thr Asn Gln Ile Asn Asn Pro Glu Val Asp | | |
| | 440 | 450 |
| Val Asp Ile Thr Arg Pro Asp Thr Phe Ile Arg Gln Gln Ile Met | | |
| | 455 | 465 |
| Ala Leu Arg Val Met Thr Asn Lys Leu Lys Asn Ala Tyr Asn Gly | | |
| | 470 | 480 |
| Asn Asp Val Asn Phe Gln Asp Thr Ser Asp Glu Ser Ser Gly Ser | | |
| | 485 | 495 |
| Gly Ser Gly Ser Gly Cys Met Asp Asp Val Cys Pro Thr Glu Phe | | |
| | 500 | 510 |
| Glu Phe Val Thr Thr Glu Ala Pro Ala Val Asp Pro Asp Arg Arg | | |
| | 515 | 525 |
| Glu Val Asp Ser Ser Ala Ala Gln Arg Gly His Ser Leu Leu Ser | | |
| | 530 | 540 |
| Trp Ser Leu Thr Cys Ile Val Leu Ala Leu Gln Arg Leu Cys Arg | | |
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<223> Synthetic oligonucleotide probe

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<210> 112

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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 <211> 515
 <212> PRT
 <213> Homo sapiens

<400> 114

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Arg | Gly | Cys | Ala | Gly | His | Pro | Pro | Pro | Pro | Ser | Pro |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Gln | Ala | Cys | Val | Cys | Pro | Gly | Lys | Met | Leu | Ala | Met | Gly | Ala | Leu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ala | Gly | Phe | Trp | Ile | Leu | Cys | Leu | Leu | Thr | Tyr | Gly | Tyr | Leu | Ser |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Trp | Gly | Gln | Ala | Leu | Glu | Glu | Glu | Glu | Glu | Gly | Ala | Leu | Leu | Ala |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Gln | Ala | Gly | Glu | Lys | Leu | Glu | Pro | Ser | Thr | Thr | Ser | Thr | Ser | Gln |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Pro | His | Leu | Ile | Phe | Ile | Leu | Ala | Asp | Asp | Gln | Gly | Phe | Arg | Asp |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Val | Gly | Tyr | His | Gly | Ser | Glu | Ile | Lys | Thr | Pro | Thr | Leu | Asp | Lys |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Leu | Ala | Ala | Glu | Gly | Val | Lys | Leu | Glu | Asn | Tyr | Tyr | Val | Gln | Pro |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Ile | Cys | Thr | Pro | Ser | Arg | Ser | Gln | Phe | Ile | Thr | Gly | Lys | Tyr | Gln |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Ile | His | Thr | Gly | Leu | Gln | His | Ser | Ile | Ile | Arg | Pro | Thr | Gln | Pro |
| | | | 140 | | | | | | 145 | | | | | 150 |

| | | |
|-----------------|---------------------|-------------------------|
| Asn Cys Leu Pro | Leu Asp Asn Ala Thr | Leu Pro Gln Lys Leu Lys |
| 155 | 160 | 165 |
| Glu Val Gly Tyr | Ser Thr His Met Val | Gly Lys Trp His Leu Gly |
| 170 | 175 | 180 |
| Phe Asn Arg Lys | Glu Cys Met Pro Thr | Arg Arg Gly Phe Asp Thr |
| 185 | 190 | 195 |
| Phe Phe Gly Ser | Leu Leu Gly Ser Gly | Asp Tyr Tyr Thr His Tyr |
| 200 | 205 | 210 |
| Lys Cys Asp Ser | Pro Gly Met Cys Gly | Tyr Asp Leu Tyr Glu Asn |
| 215 | 220 | 225 |
| Asp Asn Ala Ala | Trp Asp Tyr Asp Asn | Gly Ile Tyr Ser Thr Gln |
| 230 | 235 | 240 |
| Met Tyr Thr Gln | Arg Val Gln Gln Ile | Leu Ala Ser His Asn Pro |
| 245 | 250 | 255 |
| Thr Lys Pro Ile | Phe Leu Tyr Thr Ala | Tyr Gln Ala Val His Ser |
| 260 | 265 | 270 |
| Pro Leu Gln Ala | Pro Gly Arg Tyr Phe | Glu His Tyr Arg Ser Ile |
| 275 | 280 | 285 |
| Ile Asn Ile Asn | Arg Arg Arg Tyr Ala | Ala Met Leu Ser Cys Leu |
| 290 | 295 | 300 |
| Asp Glu Ala Ile | Asn Asn Val Thr Leu | Ala Leu Lys Thr Tyr Gly |
| 305 | 310 | 315 |
| Phe Tyr Asn Asn | Ser Ile Ile Ile Tyr | Ser Ser Asp Asn Gly Gly |
| 320 | 325 | 330 |
| Gln Pro Thr Ala | Gly Gly Ser Asn Trp | Pro Leu Arg Gly Ser Lys |
| 335 | 340 | 345 |
| Gly Thr Tyr Trp | Glu Gly Gly Ile Arg | Ala Val Gly Phe Val His |
| 350 | 355 | 360 |
| Ser Pro Leu Leu | Lys Asn Lys Gly Thr | Val Cys Lys Glu Leu Val |
| 365 | 370 | 375 |
| His Ile Thr Asp | Trp Tyr Pro Thr Leu | Ile Ser Leu Ala Glu Gly |
| 380 | 385 | 390 |
| Gln Ile Asp Glu | Asp Ile Gln Leu Asp | Gly Tyr Asp Ile Trp Glu |
| 395 | 400 | 405 |
| Thr Ile Ser Glu | Gly Leu Arg Ser Pro | Arg Val Asp Ile Leu His |
| 410 | 415 | 420 |
| Asn Ile Asp Pro | Tyr Thr Pro Arg Gln | Lys Met Ala Pro Gly Gln |
| 425 | 430 | 435 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Met | Gly | Ser | Gly | Thr | Leu | Gln | Ser | Ser | Gln | Pro | Ser | Glu |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Cys | Ser | Thr | Gly | Asn | Cys | Leu | Gln | Glu | Ile | Leu | Ala | Thr | Ala | Thr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Gly | Ser | Pro | Leu | Ser | Leu | Ser | Ala | Thr | Trp | Asp | Arg | Thr | Gly | Gly |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Thr | Met | Asn | Gly | Ser | Pro | Cys | Gln | Leu | Ala | Lys | Val | Tyr | Gly | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ser | Thr | Ser | Gln | Pro | Thr | His | Met | Arg | Gly | Trp | Thr | Tyr | Leu | Thr |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gly | Ile | Gln | Glu | Ser | | | | | | | | | | |
| | | | | 515 | | | | | | | | | | |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 115

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<210> 116

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 116

ctctctgagt gtacatctgt gtgg 24

<210> 117

<211> 53

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<220>

<221> unsure

<222> 33

<223> unknown base

<400> 117

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cgg 53

<210> 118

<211> 2260

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2009, 2026, 2033, 2055, 2074, 2078, 2086

<223> unknown base

<400> 118

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gccttgcgct cccgctgctg ctctcctggg tggcaggtgg ttctgggaac 200
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acagcaaggg agtctgtgaa gctacatgcg aacctggatg taagtttggg 350
gagtgcgtgg gaccaaacia atgcagatgc tttccaggat acaccgggaa 400
aacctgcagt caagatgtga atgagtgtgg aatgaaaccc cggccatgcc 450
aacacagatg tgtgaataca cacggaagct acaagtgctt ttgcctcagt 500
ggccacatgc tcatgccaga tgctacgtgt gtgaactcta ggacatgtgc 550
catgataaac tgtcagtaca gctgtgaaga cacagaagaa gggccacagt 600
gcctgtgtcc atcctcagga ctccgcctgg ccccaaattg aagagactgt 650
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<210> 119

<211> 338

<212> PRT

<213> Homo sapiens

<400> 119

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Leu | Pro | Trp | Ser | Leu | Ala | Leu | Pro | Leu | Leu | Leu | Ser | Trp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Val | Ala | Gly | Gly | Phe | Gly | Asn | Ala | Ala | Ser | Ala | Arg | His | His | Gly | | 20 | 25 | 30 |
| Leu | Leu | Ala | Ser | Ala | Arg | Gln | Pro | Gly | Val | Cys | His | Tyr | Gly | Thr | | 35 | 40 | 45 |
| Lys | Leu | Ala | Cys | Cys | Tyr | Gly | Trp | Arg | Arg | Asn | Ser | Lys | Gly | Val | | 50 | 55 | 60 |
| Cys | Glu | Ala | Thr | Cys | Glu | Pro | Gly | Cys | Lys | Phe | Gly | Glu | Cys | Val | | 65 | 70 | 75 |
| Gly | Pro | Asn | Lys | Cys | Arg | Cys | Phe | Pro | Gly | Tyr | Thr | Gly | Lys | Thr | | 80 | 85 | 90 |
| Cys | Ser | Gln | Asp | Val | Asn | Glu | Cys | Gly | Met | Lys | Pro | Arg | Pro | Cys | | 95 | 100 | 105 |
| Gln | His | Arg | Cys | Val | Asn | Thr | His | Gly | Ser | Tyr | Lys | Cys | Phe | Cys | | 110 | 115 | 120 |
| Leu | Ser | Gly | His | Met | Leu | Met | Pro | Asp | Ala | Thr | Cys | Val | Asn | Ser | | 125 | 130 | 135 |
| Arg | Thr | Cys | Ala | Met | Ile | Asn | Cys | Gln | Tyr | Ser | Cys | Glu | Asp | Thr | | 140 | 145 | 150 |
| Glu | Glu | Gly | Pro | Gln | Cys | Leu | Cys | Pro | Ser | Ser | Gly | Leu | Arg | Leu | | 155 | 160 | 165 |
| Ala | Pro | Asn | Gly | Arg | Asp | Cys | Leu | Asp | Ile | Asp | Glu | Cys | Ala | Ser | | 170 | 175 | 180 |
| Gly | Lys | Val | Ile | Cys | Pro | Tyr | Asn | Arg | Arg | Cys | Val | Asn | Thr | Phe | | 185 | 190 | 195 |
| Gly | Ser | Tyr | Tyr | Cys | Lys | Cys | His | Ile | Gly | Phe | Glu | Leu | Gln | Tyr | | 200 | 205 | 210 |
| Ile | Ser | Gly | Arg | Tyr | Asp | Cys | Ile | Asp | Ile | Asn | Glu | Cys | Thr | Met | | 215 | 220 | 225 |
| Asp | Ser | His | Thr | Cys | Ser | His | His | Ala | Asn | Cys | Phe | Asn | Thr | Gln | | 230 | 235 | 240 |
| Gly | Ser | Phe | Lys | Cys | Lys | Cys | Lys | Gln | Gly | Tyr | Lys | Gly | Asn | Gly | | 245 | 250 | 255 |
| Leu | Arg | Cys | Ser | Ala | Ile | Pro | Glu | Asn | Ser | Val | Lys | Glu | Val | Leu | | 260 | 265 | 270 |
| Arg | Ala | Pro | Gly | Thr | Ile | Lys | Asp | Arg | Ile | Lys | Lys | Leu | Leu | Ala | | 275 | 280 | 285 |
| His | Lys | Asn | Ser | Met | Lys | Lys | Lys | Ala | Lys | Ile | Lys | Asn | Val | Thr | | 290 | 295 | 300 |

Pro Glu Pro Thr Arg Thr Pro Thr Pro Lys Val Asn Leu Gln Pro
305 310 315

Phe Asn Tyr Glu Glu Ile Val Ser Arg Gly Gly Asn Ser His Gly
320 325 330

Gly Lys Lys Gly Asn Glu Glu Lys
335

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<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 120

cctcagtggc cacatgctca tg 22

<210> 121

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 121

ggctgcacgt atggctatcc atag 24

<210> 122

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 122

gataaactgt cagtacagct gtgaagacac agaagaaggg ccacagtgcc 50

<210> 123

<211> 1199

<212> DNA

<213> Homo sapiens

<400> 123

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gtgcagctgc tgcgcttcct gagggctgac ggcgacctga cgctactatg 100

ggccgagtgg cagggacgac gcccagaatg ggagctgact gatatggtgg 150

tgtgggtgac tggagcctcg agtggaattg gtgaggagct ggcttaccag 200

ttgtctaaac taggagtttc tcttgtgctg tcagccagaa gagtgcata 250

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<210> 124

<211> 289

<212> PRT

<213> Homo sapiens

<400> 124

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Val | Trp | Val | Thr | Gly | Ala | Ser | Ser | Gly | Ile | Gly | Glu | Glu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Tyr | Gln | Leu | Ser | Lys | Leu | Gly | Val | Ser | Leu | Val | Leu | Ser |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Arg | Val | His | Glu | Leu | Glu | Arg | Val | Lys | Arg | Arg | Cys | Leu |
| | | | | 35 | | | | 40 | | | | | 45 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Gly | Asn | Leu | Lys | Glu | Lys | Asp | Ile | Leu | Val | Leu | Pro | Leu |
| | | | | 50 | | | | 55 | | | | | 60 | |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Asp | Leu | Thr | Asp | Thr | Gly | Ser | His | Glu | Ala | Ala | Thr | Lys | Ala | Val | | 65 | 70 | 75 |
| Leu | Gln | Glu | Phe | Gly | Arg | Ile | Asp | Ile | Leu | Val | Asn | Asn | Gly | Gly | | 80 | 85 | 90 |
| Met | Ser | Gln | Arg | Ser | Leu | Cys | Met | Asp | Thr | Ser | Leu | Asp | Val | Tyr | | 95 | 100 | 105 |
| Arg | Lys | Leu | Ile | Glu | Leu | Asn | Tyr | Leu | Gly | Thr | Val | Ser | Leu | Thr | | 110 | 115 | 120 |
| Lys | Cys | Val | Leu | Pro | His | Met | Ile | Glu | Arg | Lys | Gln | Gly | Lys | Ile | | 125 | 130 | 135 |
| Val | Thr | Val | Asn | Ser | Ile | Leu | Gly | Ile | Ile | Ser | Val | Pro | Leu | Ser | | 140 | 145 | 150 |
| Ile | Gly | Tyr | Cys | Ala | Ser | Lys | His | Ala | Leu | Arg | Gly | Phe | Phe | Asn | | 155 | 160 | 165 |
| Gly | Leu | Arg | Thr | Glu | Leu | Ala | Thr | Tyr | Pro | Gly | Ile | Ile | Val | Ser | | 170 | 175 | 180 |
| Asn | Ile | Cys | Pro | Gly | Pro | Val | Gln | Ser | Asn | Ile | Val | Glu | Asn | Ser | | 185 | 190 | 195 |
| Leu | Ala | Gly | Glu | Val | Thr | Lys | Thr | Ile | Gly | Asn | Asn | Gly | Asp | Gln | | 200 | 205 | 210 |
| Ser | His | Lys | Met | Thr | Thr | Ser | Arg | Cys | Val | Arg | Leu | Met | Leu | Ile | | 215 | 220 | 225 |
| Ser | Met | Ala | Asn | Asp | Leu | Lys | Glu | Val | Trp | Ile | Ser | Glu | Gln | Pro | | 230 | 235 | 240 |
| Phe | Leu | Leu | Val | Thr | Tyr | Leu | Trp | Gln | Tyr | Met | Pro | Thr | Trp | Ala | | 245 | 250 | 255 |
| Trp | Trp | Ile | Thr | Asn | Lys | Met | Gly | Lys | Lys | Arg | Ile | Glu | Asn | Phe | | 260 | 265 | 270 |
| Lys | Ser | Gly | Val | Asp | Ala | Asp | Ser | Ser | Tyr | Phe | Lys | Ile | Phe | Lys | | 275 | 280 | 285 |
| Thr | Lys | His | Asp | | | | | | | | | | | | | | | |

<210> 125

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 125

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<210> 126

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 126

ctgtgaatag catcctggg 19

<210> 127

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 127

cttttcaagc cactggaggg 20

<210> 128

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 128

ctgtagacat ccaagctggg atcc 24

<210> 129

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 129

aagagtctgc atccacacca ctc 23

<210> 130

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 130

acctgacgct actatgggcc gagtggcagg gacgacgccc agaagtg 46

<210> 131
<211> 2365
<212> DNA
<213> Homo sapiens

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 cctcctttac tctttcagat acaatcacgc cagccacgtt gttttgaaaa 2300
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 <211> 571
 <212> PRT
 <213> Homo sapiens

<400> 132
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 1 5 10 15
 Ala Trp Ile Leu Phe Phe Val Leu Tyr Asp Phe Cys Ile Val Cys
 20 25 30

| | | |
|---------------------|---------------------|-------------------------|
| Ile Thr Thr Tyr Ala | Ile Asn Val Ser | Leu Met Trp Leu Ser Phe |
| 35 | 40 | 45 |
| Arg Lys Val Gln Glu | Pro Gln Gly Lys Ala | Lys Arg His Gly Asn |
| 50 | 55 | 60 |
| Thr Val Pro Gly Glu | Trp Pro Trp Gln Ala | Ser Val Arg Arg Gln |
| 65 | 70 | 75 |
| Gly Ala His Ile Cys | Ser Gly Ser Leu Val | Ala Asp Thr Trp Val |
| 80 | 85 | 90 |
| Leu Thr Ala Ala His | Cys Phe Glu Lys Ala | Ala Ala Thr Glu Leu |
| 95 | 100 | 105 |
| Asn Ser Trp Ser Val | Val Leu Gly Ser Leu | Gln Arg Glu Gly Leu |
| 110 | 115 | 120 |
| Ser Pro Gly Ala Glu | Glu Val Gly Val Ala | Ala Leu Gln Leu Pro |
| 125 | 130 | 135 |
| Arg Ala Tyr Asn His | Tyr Ser Gln Gly Ser | Asp Leu Ala Leu Leu |
| 140 | 145 | 150 |
| Gln Leu Ala His Pro | Thr Thr His Thr Pro | Leu Cys Leu Pro Gln |
| 155 | 160 | 165 |
| Pro Ala His Arg Phe | Pro Phe Gly Ala Ser | Cys Trp Ala Thr Gly |
| 170 | 175 | 180 |
| Trp Asp Gln Asp Thr | Ser Asp Ala Pro Gly | Thr Leu Arg Asn Leu |
| 185 | 190 | 195 |
| Arg Leu Arg Leu Ile | Ser Arg Pro Thr Cys | Asn Cys Ile Tyr Asn |
| 200 | 205 | 210 |
| Gln Leu His Gln Arg | His Leu Ser Asn Pro | Ala Arg Pro Gly Met |
| 215 | 220 | 225 |
| Leu Cys Gly Gly Pro | Gln Pro Gly Val Gln | Gly Pro Cys Gln Gly |
| 230 | 235 | 240 |
| Asp Ser Gly Gly Pro | Val Leu Cys Leu Glu | Pro Asp Gly His Trp |
| 245 | 250 | 255 |
| Val Gln Ala Gly Ile | Ile Ser Phe Ala Ser | Ser Cys Ala Gln Glu |
| 260 | 265 | 270 |
| Asp Ala Pro Val Leu | Leu Thr Asn Thr Ala | Ala His Ser Ser Trp |
| 275 | 280 | 285 |
| Leu Gln Ala Arg Val | Gln Gly Ala Ala Phe | Leu Ala Gln Ser Pro |
| 290 | 295 | 300 |
| Glu Thr Pro Glu Met | Ser Asp Glu Asp Ser | Cys Val Ala Cys Gly |
| 305 | 310 | 315 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Arg | Thr | Ala | Gly | Pro | Gln | Ala | Gly | Ala | Pro | Ser | Pro | Trp | 320 | 325 | 330 |
| Pro | Trp | Glu | Ala | Arg | Leu | Met | His | Gln | Gly | Gln | Leu | Ala | Cys | Gly | 335 | 340 | 345 |
| Gly | Ala | Leu | Val | Ser | Glu | Glu | Ala | Val | Leu | Thr | Ala | Ala | His | Cys | 350 | 355 | 360 |
| Phe | Ile | Gly | Arg | Gln | Ala | Pro | Glu | Glu | Trp | Ser | Val | Gly | Leu | Gly | 365 | 370 | 375 |
| Thr | Arg | Pro | Glu | Glu | Trp | Gly | Leu | Lys | Gln | Leu | Ile | Leu | His | Gly | 380 | 385 | 390 |
| Ala | Tyr | Thr | His | Pro | Glu | Gly | Gly | Tyr | Asp | Met | Ala | Leu | Leu | Leu | 395 | 400 | 405 |
| Leu | Ala | Gln | Pro | Val | Thr | Leu | Gly | Ala | Ser | Leu | Arg | Pro | Leu | Cys | 410 | 415 | 420 |
| Leu | Pro | Tyr | Pro | Asp | His | His | Leu | Pro | Asp | Gly | Glu | Arg | Gly | Trp | 425 | 430 | 435 |
| Val | Leu | Gly | Arg | Ala | Arg | Pro | Gly | Ala | Gly | Ile | Ser | Ser | Leu | Gln | 440 | 445 | 450 |
| Thr | Val | Pro | Val | Thr | Leu | Leu | Gly | Pro | Arg | Ala | Cys | Ser | Arg | Leu | 455 | 460 | 465 |
| His | Ala | Ala | Pro | Gly | Gly | Asp | Gly | Ser | Pro | Ile | Leu | Pro | Gly | Met | 470 | 475 | 480 |
| Val | Cys | Thr | Ser | Ala | Val | Gly | Glu | Leu | Pro | Ser | Cys | Glu | Gly | Leu | 485 | 490 | 495 |
| Ser | Gly | Ala | Pro | Leu | Val | His | Glu | Val | Arg | Gly | Thr | Trp | Phe | Leu | 500 | 505 | 510 |
| Ala | Gly | Leu | His | Ser | Phe | Gly | Asp | Ala | Cys | Gln | Gly | Pro | Ala | Arg | 515 | 520 | 525 |
| Pro | Ala | Val | Phe | Thr | Ala | Leu | Pro | Ala | Tyr | Glu | Asp | Trp | Val | Ser | 530 | 535 | 540 |
| Ser | Leu | Asp | Trp | Gln | Val | Tyr | Phe | Ala | Glu | Glu | Pro | Glu | Pro | Glu | 545 | 550 | 555 |
| Ala | Glu | Pro | Gly | Ser | Cys | Leu | Ala | Asn | Ile | Ser | Gln | Pro | Thr | Ser | 560 | 565 | 570 |

Cys

<210> 133

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 133

cctgtgctgt gcctcgagcc tgac 24

<210> 134

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 134

gtgggcagca gttagcaccg cctc 24

<210> 135

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 135

ggctggcatc atcagctttg catcaagctg tgcccaggag gacgc 45

<210> 136

<211> 1998

<212> DNA

<213> Homo sapiens

<400> 136

cgggcgcgcc ccggccccc ttctgggcgg gcctcgctgc ggcgggcgact 50

gagccaggct gggccgcgtc cctgagtccc agagtcggcg cggcgcggca 100

ggggcagcct tccaccacgg ggagcccagc tgtcagccgc ctcacaggaa 150

gatgctgcgt cggcggggca gccctggcat ggggtgtgcat gtgggtgcag 200

ccctgggagc actgtggttc tgcctcacag gagccctgga ggtccaggtc 250

cctgaagacc cagtgggtggc actggtgggc accgatgcca cctgtgctg 300

ctccttctcc cctgagcctg gcttcagcct ggcacagctc aacctcatct 350

ggcagctgac agataccaaa cagctggtgc acagctttgc tgagggccag 400

gaccagggca gcgcctatgc caaccgcacg gccctcttcc cggacctgct 450

ggcacagggc aacgcatccc tgaggctgca gcgcgtgcgt gtggcggacg 500

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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Gln | Gln | Asp | Ala | His | Xaa | Ser | Val | Thr | Ile | Thr | Gly | Gln | 230 | 235 | 240 |
| Pro | Met | Thr | Phe | Pro | Pro | Glu | Ala | Leu | Trp | Val | Thr | Val | Gly | Leu | 245 | 250 | 255 |
| Ser | Val | Cys | Leu | Ile | Ala | Leu | Leu | Val | Ala | Leu | Ala | Phe | Val | Cys | 260 | 265 | 270 |
| Trp | Arg | Lys | Ile | Lys | Gln | Ser | Cys | Glu | Glu | Glu | Asn | Ala | Gly | Ala | 275 | 280 | 285 |
| Glu | Asp | Gln | Asp | Gly | Glu | Gly | Glu | Gly | Ser | Lys | Thr | Ala | Leu | Gln | 290 | 295 | 300 |
| Pro | Leu | Lys | His | Ser | Asp | Ser | Lys | Glu | Asp | Asp | Gly | Gln | Glu | Ile | 305 | 310 | 315 |

Ala

<210> 138
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 138
 ctggcacagc tcaacctcat ctgg 24

<210> 139
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 139
 gctgtctgtc tgtctcattg 20

<210> 140
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 140
 ggacacagta tactgaccac 20

<210> 141
 <211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 141
tgccaaccag gcagctgtaa gtgc 24

<210> 142
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 142
tggaagaaga ggggtggtgat gtgg 24

<210> 143
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 143
cagctgacag acaccaaaca gctggtgcac agtttcaccg aaggc 45

<210> 144
<211> 2336
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1620, 1673
<223> unknown base

<400> 144
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tacgttctta aatctatgaa gtcgagggac ctttcgctgc tttttagagg 150
acttctttcc ttgcttcagc aacatgaggc ttttcttggtg gaacgcggtc 200
ttgactctgt tcgtcacttc tttgattggg gctttgatcc ctgaaccaga 250
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aaggagggga tttgatgttg gtccactatg aaggctactt agaaaaggac 350
ggctccttat ttcactccac tcacaaacat aacaatggtc agcccatttg 400

gtttaccctg ggcacacctg aggtctctcaa aggttgggac cagggcttga 450
aaggaatgtg tgtaggagag aagagaaagc tcatcattcc tcctgctctg 500
ggctatggaa aagaaggaaa aggtaaaatt ccccagaaa gtacactgat 550
atttaatat gatctcctgg agattcgaaa tggaccaaga tcccatgaat 600
cattccaaga aatggatctt aatgatgact ggaaactctc taaagatgag 650
gttaaagcat atttaaagaa ggagtttgaa aaacatggtg cggtggtgaa 700
tgaaagtcac catgatgctt tgggtggagga tatttttgat aaagaagatg 750
aagacaaaga tgggtttata tctgccagag aatttacata taaacacgat 800
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 agtatattat actacaataa cattgtatca taagataaag tagtaaacca 1950
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 aggcggaggt tgcagtgagc caagattgtg ccaactgcact ccagcctggg 2250
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<210> 145

<211> 211

<212> PRT

<213> Homo sapiens

<400> 145

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Phe | Leu | Trp | Asn | Ala | Val | Leu | Thr | Leu | Phe | Val | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Ile | Gly | Ala | Leu | Ile | Pro | Glu | Pro | Glu | Val | Lys | Ile | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Gln | Lys | Pro | Phe | Ile | Cys | His | Arg | Lys | Thr | Lys | Gly | Gly |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Met | Leu | Val | His | Tyr | Glu | Gly | Tyr | Leu | Glu | Lys | Asp | Gly |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Phe | His | Ser | Thr | His | Lys | His | Asn | Asn | Gly | Gln | Pro | Ile |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Phe | Thr | Leu | Gly | Ile | Leu | Glu | Ala | Leu | Lys | Gly | Trp | Asp | Gln |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Lys | Gly | Met | Cys | Val | Gly | Glu | Lys | Arg | Lys | Leu | Ile | Ile |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Pro | Ala | Leu | Gly | Tyr | Gly | Lys | Glu | Gly | Lys | Gly | Lys | Ile | Pro |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Ser | Thr | Leu | Ile | Phe | Asn | Ile | Asp | Leu | Leu | Glu | Ile | Arg |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gly | Pro | Arg | Ser | His | Glu | Ser | Phe | Gln | Glu | Met | Asp | Leu | Asn |
| | | | 140 | | | | | | 145 | | | | | 150 |

Asp Asp Trp Lys Leu Ser Lys Asp Glu Val Lys Ala Tyr Leu Lys
155 160 165

Lys Glu Phe Glu Lys His Gly Ala Val Val Asn Glu Ser His His
170 175 180

Asp Ala Leu Val Glu Asp Ile Phe Asp Lys Glu Asp Glu Asp Lys
185 190 195

Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His Asp Glu
200 205 210

Leu

<210> 146

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 146

ctttccttgcc ttcagcaaca tgaggc 26

<210> 147

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 147

gcccagagca ggaggaatga tgagc 25

<210> 148

<211> 49

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 148

gtggaacgcg gtcttgactc tgttcgtcac ttctttgatt ggggctttg 49

<210> 149

<211> 2196

<212> DNA

<213> Homo sapiens

<400> 149

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<210> 150

<211> 215

<212> PRT

<213> Homo sapiens

<400> 150

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | His | Arg | Asp | Ala | Trp | Leu | Pro | Arg | Pro | Ala | Phe | Ser | Leu | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Ser | Leu | Phe | Phe | Ser | Leu | Val | Pro | Pro | Gly | Arg | Ser | Met |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Thr | Val | Pro | Ala | Thr | Leu | Asn | Val | Leu | Asn | Gly | Ser | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Leu | Pro | Cys | Thr | Phe | Asn | Ser | Cys | Tyr | Thr | Val | Asn | His |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gln | Phe | Ser | Leu | Asn | Trp | Thr | Tyr | Gln | Glu | Cys | Asn | Asn | Cys |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Glu | Glu | Met | Phe | Leu | Gln | Phe | Arg | Met | Lys | Ile | Ile | Asn | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | Glu | Arg | Phe | Gln | Asp | Arg | Val | Glu | Phe | Ser | Gly | Asn | Pro |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Lys | Tyr | Asp | Val | Ser | Val | Met | Leu | Arg | Asn | Val | Gln | Pro | Glu |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 110 | 115 | 120 |
|---|-----|-----|
| Asp Glu Gly Ile Tyr Asn Cys Tyr Ile Met Asn Pro Pro Asp Arg | | |
| 125 | 130 | 135 |
| His Arg Gly His Gly Lys Ile His Leu Gln Val Leu Met Glu Glu | | |
| 140 | 145 | 150 |
| Pro Pro Glu Arg Asp Ser Thr Val Ala Val Ile Val Gly Ala Ser | | |
| 155 | 160 | 165 |
| Val Gly Gly Phe Leu Ala Val Val Ile Leu Val Leu Met Val Val | | |
| 170 | 175 | 180 |
| Lys Cys Val Arg Arg Lys Lys Glu Gln Lys Leu Ser Thr Asp Asp | | |
| 185 | 190 | 195 |
| Leu Lys Thr Glu Glu Glu Gly Lys Thr Asp Gly Glu Gly Asn Pro | | |
| 200 | 205 | 210 |
| Asp Asp Gly Ala Lys | | |
| 215 | | |

<210> 151
 <211> 524
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 103, 233
 <223> unknown base

<400> 151
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 ccnactaaca tctcagtctc tgaaaatgca cagagatgcc tggctacctc 150
 gccctgcctt cagcctcacg gggctcagtc tctttttctc tttggtgcca 200
 ccaggacgga gcatggaggt ccacagtacc tgnccaccct caacgtcctc 250
 aatggctctg acgcccgcct gccctgcctt tcaactcctg ctacacagtg 300
 aaccacaaac agttctccct gaactggact taccaggagt gcaacaactg 350
 ctctgaggag atgttctctc agttccgcat gaagatcatt aacctgaagc 400
 tggagcggtt tcaagaccgc gtggagttct cagggaaacc cagcaagtac 450
 gatgtgtcgg tgatgctgag aaacgtgcag ccggaggatg aggggattta 500
 caactgctac atcatgaacc cccc 524

<210> 152

<211> 368
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 56, 123
<223> unknown base

<400> 152
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gaggtncaca tacctgccac cctcaacgtc ctcaatggct ttgacgcccg 100
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ccctgaactg gatttaccag gagtgaaca actggctctg aggagatgtt 200
cctccagttc ccgcatggaa gatcatttaa cctgaaagct ggaagcgggt 250
ttcaagaacc gcgtggaagt ttctcagga accccagcaa gtacgatgtg 300
tcggtgatgc tgagaaacgt gcagccggag gatgagggga tttacaactg 350
ctacatcatg aaccccc 368

<210> 153
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 153
acggagcatg gaggtccaca gtac 24

<210> 154
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 154
gcacgtttct cagcatcacc gac 23

<210> 155
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 155

cgctgacct gcaccttcaa ctctgctac acagtgaacc acaaacagtt 50

<210> 156

<211> 2680

<212> DNA

<213> Homo sapiens

<400> 156

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gggctgctcc cggatggcct cctgttctct ttgctgctgc taatgctgct 100

cgcggaacca gcgctcccg cggacgtca cccccagtg gtgctggctcc 150

ctggtgattt gggtaaccaa ctggaagcca agctggacaa gccgacagtg 200

gtgcactacc tctgctccaa gaagaccgaa agctacttca caatctggct 250

gaacctggaa ctgctgctgc ctgtcatcat tgactgctgg attgacaata 300

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gtggatgtac gtgtccctgg ctttgggaag accttctcac tggagttcct 400

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ccgcgagatg atcgaggaga tgtaccagct gtatgggggc cccgtggtgc 600

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cggtcagctg tctccaccag ctggctgctg ccctacaact acacatggtc 850

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actaccgcaa gttcttccag gacatcggct ttgaagatgg ctggctcatg 950

cggcaggaca cagaagggct ggtggaagcc acgatgccac ctggcgtgca 1000

gctgcactgc ctctatggta ctggcgtccc cacaccagac tccttctact 1050

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agatgctggc caacgccacc acctggcct atctgaaacg tgtgctcctt 1250

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<210> 157

<211> 412

<212> PRT

<213> Homo Sapien

<400> 157

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | His | Leu | Arg | Pro | Tyr | Arg | Val | Gly | Leu | Leu | Pro | Asp |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Leu | Phe | Leu | Leu | Leu | Leu | Leu | Met | Leu | Leu | Ala | Asp | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Pro | Ala | Gly | Arg | His | Pro | Pro | Val | Val | Leu | Val | Pro | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Gly | Asn | Gln | Leu | Glu | Ala | Lys | Leu | Asp | Lys | Pro | Thr | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | His | Tyr | Leu | Cys | Ser | Lys | Lys | Thr | Glu | Ser | Tyr | Phe | Thr | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Asn | Leu | Glu | Leu | Leu | Leu | Pro | Val | Ile | Ile | Asp | Cys | Trp |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Asn | Ile | Arg | Leu | Val | Tyr | Asn | Lys | Thr | Ser | Arg | Ala | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Phe | Pro | Asp | Gly | Val | Asp | Val | Arg | Val | Pro | Gly | Phe | Gly | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Phe | Ser | Leu | Glu | Phe | Leu | Asp | Pro | Ser | Lys | Ser | Ser | Val | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Tyr | Phe | His | Thr | Met | Val | Glu | Ser | Leu | Val | Gly | Trp | Gly | Tyr |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Arg | Gly | Glu | Asp | Val | Arg | Gly | Ala | Pro | Tyr | Asp | Trp | Arg | Arg |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Pro | Asn | Glu | Asn | Gly | Pro | Tyr | Phe | Leu | Ala | Leu | Arg | Glu | Met |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Glu | Glu | Met | Tyr | Gln | Leu | Tyr | Gly | Gly | Pro | Val | Val | Leu | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | His | Ser | Met | Gly | Asn | Met | Tyr | Thr | Leu | Tyr | Phe | Leu | Gln | Arg |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Pro | Gln | Ala | Trp | Lys | Asp | Lys | Tyr | Ile | Arg | Ala | Phe | Val | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Ala | Pro | Trp | Gly | Gly | Val | Ala | Lys | Thr | Leu | Arg | Val | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |

Ala Ser Gly Asp Asn Asn Arg Ile Pro Val Ile Gly Pro Leu Lys

| 245 | 250 | 255 |
|-------------------------------------|-------------------------|-----|
| Ile Arg Glu Gln Gln Arg Ser Ala Val | Ser Thr Ser Trp Leu Leu | |
| 260 | 265 | 270 |
| Pro Tyr Asn Tyr Thr Trp Ser Pro Glu | Lys Val Phe Val Gln Thr | |
| 275 | 280 | 285 |
| Pro Thr Ile Asn Tyr Thr Leu Arg Asp | Tyr Arg Lys Phe Phe Gln | |
| 290 | 295 | 300 |
| Asp Ile Gly Phe Glu Asp Gly Trp Leu | Met Arg Gln Asp Thr Glu | |
| 305 | 310 | 315 |
| Gly Leu Val Glu Ala Thr Met Pro Pro | Gly Val Gln Leu His Cys | |
| 320 | 325 | 330 |
| Leu Tyr Gly Thr Gly Val Pro Thr Pro | Asp Ser Phe Tyr Tyr Glu | |
| 335 | 340 | 345 |
| Ser Phe Pro Asp Arg Asp Pro Lys Ile | Cys Phe Gly Asp Gly Asp | |
| 350 | 355 | 360 |
| Gly Thr Val Asn Leu Lys Ser Ala Leu | Gln Cys Gln Ala Trp Gln | |
| 365 | 370 | 375 |
| Ser Arg Gln Glu His Gln Val Leu Leu | Gln Glu Leu Pro Gly Ser | |
| 380 | 385 | 390 |
| Glu His Ile Glu Met Leu Ala Asn Ala | Thr Thr Leu Ala Tyr Leu | |
| 395 | 400 | 405 |
| Lys Arg Val Leu Leu Gly Pro | | |
| 410 | | |

<210> 158

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 158

ctggggctac acacggggtg agg 23

<210> 159

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 159

ggtgccgctg cagaaagtag agcg 24

<210> 160
<211> 45
<212> DNA
<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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gccccaaatg aaaacggggcc ctacttcctg gccctccgag agatg 45

<210> 161
<211> 1512
<212> DNA
<213> Homo sapiens

<400> 161
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gcggcgcttc ctgacgcagc cgcagggtgtt ggcgcgcgcc gtgtgcttgg 150
tcttcgcctt gatcgtgttc tcctgcattt atggtgaggg ctacagcaat 200
gcccacgagt ctaagcagat gtactgcgtg ttcaaccgca acgaggatgc 250
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ctaccagccg cccctgtgt actgagtggc ggtagcgtg ggaaggggga 750
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 gcgttctctg ccaaagactc gtgggggcca tcacacctgc cctgtgcagc 1150
 ggagccggac caggctcttg tgtcctcact caggtttgtt tcccctgtgc 1200
 ccaactgctgt atgatctggg ggccaccacc ctgtgccggt ggcctctggg 1250
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<400> 162

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| Met | Glu | Ser | Gly | Ala | Tyr | Gly | Ala | Ala | Lys | Ala | Gly | Gly | Ser | Phe | 1 | 5 | 10 | 15 |
| Asp | Leu | Arg | Arg | Phe | Leu | Thr | Gln | Pro | Gln | Val | Val | Ala | Arg | Ala | 20 | 25 | 30 | |
| Val | Cys | Leu | Val | Phe | Ala | Leu | Ile | Val | Phe | Ser | Cys | Ile | Tyr | Gly | 35 | 40 | 45 | |
| Glu | Gly | Tyr | Ser | Asn | Ala | His | Glu | Ser | Lys | Gln | Met | Tyr | Cys | Val | 50 | 55 | 60 | |
| Phe | Asn | Arg | Asn | Glu | Asp | Ala | Cys | Arg | Tyr | Gly | Ser | Ala | Ile | Gly | 65 | 70 | 75 | |
| Val | Leu | Ala | Phe | Leu | Ala | Ser | Ala | Phe | Phe | Leu | Val | Val | Asp | Ala | 80 | 85 | 90 | |
| Tyr | Phe | Pro | Gln | Ile | Ser | Asn | Ala | Thr | Asp | Arg | Lys | Tyr | Leu | Val | 95 | 100 | 105 | |
| Ile | Gly | Asp | Leu | Leu | Phe | Ser | Ala | Leu | Trp | Thr | Phe | Leu | Trp | Phe | 110 | 115 | 120 | |
| Val | Gly | Phe | Cys | Phe | Leu | Thr | Asn | Gln | Trp | Ala | Val | Thr | Asn | Pro | 125 | 130 | 135 | |
| Lys | Asp | Val | Leu | Val | Gly | Ala | Asp | Ser | Val | Arg | Ala | Ala | Ile | Thr | 140 | 145 | 150 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ser | Phe | Phe | Ser | Ile | Phe | Ser | Trp | Gly | Val | Leu | Ala | Ser | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| | | | | | | | | | | | | | | |
| Ala | Tyr | Gln | Arg | Tyr | Lys | Ala | Gly | Val | Asp | Asp | Phe | Ile | Gln | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| | | | | | | | | | | | | | | |
| Tyr | Val | Asp | Pro | Thr | Pro | Asp | Pro | Asn | Thr | Ala | Tyr | Ala | Ser | Tyr |
| | | | | 185 | | | | | 190 | | | | | 195 |
| | | | | | | | | | | | | | | |
| Pro | Gly | Ala | Ser | Val | Asp | Asn | Tyr | Gln | Gln | Pro | Pro | Phe | Thr | Gln |
| | | | | 200 | | | | | 205 | | | | | 210 |
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 35 40 45
 Pro Leu Phe Val Leu Leu Ala Leu Leu Val Leu Ala Ser Ala Gly
 50 55 60
 Val Leu Leu Trp Tyr Phe Leu Gly Tyr Lys Ala Glu Val Met Val
 65 70 75
 Ser Gln Val Tyr Ser Gly Ser Leu Arg Val Leu Asn Arg His Phe
 80 85 90
 Ser Gln Asp Leu Thr Arg Arg Glu Ser Ser Ala Phe Arg Ser Glu

| 95 | | | | | | | | | | 100 | | | | | 105 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Thr | Ala | Lys | Ala | Gln | Lys | Met | Leu | Lys | Glu | Leu | Ile | Thr | Ser | Thr | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Arg | Leu | Gly | Thr | Tyr | Tyr | Asn | Ser | Ser | Ser | Val | Tyr | Ser | Phe | Gly | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Glu | Gly | Pro | Leu | Thr | Cys | Phe | Phe | Trp | Phe | Ile | Leu | Gln | Ile | Pro | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Glu | His | Arg | Arg | Leu | Met | Leu | Ser | Pro | Glu | Val | Val | Gln | Ala | Leu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Leu | Val | Glu | Glu | Leu | Leu | Ser | Thr | Val | Asn | Ser | Ser | Ala | Ala | Val | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Pro | Tyr | Arg | Ala | Glu | Tyr | Glu | Val | Asp | Pro | Glu | Gly | Leu | Val | Ile | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | Glu | Ala | Ser | Val | Lys | Asp | Ile | Ala | Ala | Leu | Asn | Ser | Thr | Leu | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Gly | Cys | Tyr | Arg | Tyr | Ser | Tyr | Val | Gly | Gln | Gly | Gln | Val | Leu | Arg | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Leu | Lys | Gly | Pro | Asp | His | Leu | Ala | Ser | Ser | Cys | Leu | Trp | His | Leu | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Gln | Gly | Pro | Lys | Asp | Leu | Met | Leu | Lys | Leu | Arg | Leu | Glu | Trp | Thr | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Leu | Ala | Glu | Cys | Arg | Asp | Arg | Leu | Ala | Met | Tyr | Asp | Val | Ala | Gly | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Pro | Leu | Glu | Lys | Arg | Leu | Ile | Thr | Ser | Val | Tyr | Gly | Cys | Ser | Arg | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Gln | Glu | Pro | Val | Val | Glu | Val | Leu | Ala | Ser | Gly | Ala | Ile | Met | Ala | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Val | Val | Trp | Lys | Lys | Gly | Leu | His | Ser | Tyr | Tyr | Asp | Pro | Phe | Val | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Leu | Ser | Val | Gln | Pro | Val | Val | Phe | Gln | Ala | Cys | Glu | Val | Asn | Leu | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Thr | Leu | Asp | Asn | Arg | Leu | Asp | Ser | Gln | Gly | Val | Leu | Ser | Thr | Pro | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |
| Tyr | Phe | Pro | Ser | Tyr | Tyr | Ser | Pro | Gln | Thr | His | Cys | Ser | Trp | His | | | | | |
| | | | | 350 | | | | | 355 | | | | | 360 | | | | | |
| Leu | Thr | Val | Pro | Ser | Leu | Asp | Tyr | Gly | Leu | Ala | Leu | Trp | Phe | Asp | | | | | |
| | | | | 365 | | | | | 370 | | | | | 375 | | | | | |
| Ala | Tyr | Ala | Leu | Arg | Arg | Gln | Lys | Tyr | Asp | Leu | Pro | Cys | Thr | Gln | | | | | |

| 380 | | | | | | | | | | 385 | | | | | 390 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|--|
| Gly | Gln | Trp | Thr | Ile | Gln | Asn | Arg | Arg | Leu | Cys | Gly | Leu | Arg | Ile | | | | | |
| | | | | 395 | | | | | 400 | | | | | 405 | | | | | |
| Leu | Gln | Pro | Tyr | Ala | Glu | Arg | Ile | Pro | Val | Val | Ala | Thr | Ala | Gly | | | | | |
| | | | | 410 | | | | | 415 | | | | | 420 | | | | | |
| Ile | Thr | Ile | Asn | Phe | Thr | Ser | Gln | Ile | Ser | Leu | Thr | Gly | Pro | Gly | | | | | |
| | | | | 425 | | | | | 430 | | | | | 435 | | | | | |
| Val | Arg | Val | His | Tyr | Gly | Leu | Tyr | Asn | Gln | Ser | Asp | Pro | Cys | Pro | | | | | |
| | | | | 440 | | | | | 445 | | | | | 450 | | | | | |
| Gly | Glu | Phe | Leu | Cys | Ser | Val | Asn | Gly | Leu | Cys | Val | Pro | Ala | Cys | | | | | |
| | | | | 455 | | | | | 460 | | | | | 465 | | | | | |
| Asp | Gly | Val | Lys | Asp | Cys | Pro | Asn | Gly | Leu | Asp | Glu | Arg | Asn | Cys | | | | | |
| | | | | 470 | | | | | 475 | | | | | 480 | | | | | |
| Val | Cys | Arg | Ala | Thr | Phe | Gln | Cys | Lys | Glu | Asp | Ser | Thr | Cys | Ile | | | | | |
| | | | | 485 | | | | | 490 | | | | | 495 | | | | | |
| Ser | Leu | Pro | Lys | Val | Cys | Asp | Gly | Gln | Pro | Asp | Cys | Leu | Asn | Gly | | | | | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | | | |
| Ser | Asp | Glu | Glu | Gln | Cys | Gln | Glu | Gly | Val | Pro | Cys | Gly | Thr | Phe | | | | | |
| | | | | 515 | | | | | 520 | | | | | 525 | | | | | |
| Thr | Phe | Gln | Cys | Glu | Asp | Arg | Ser | Cys | Val | Lys | Lys | Pro | Asn | Pro | | | | | |
| | | | | 530 | | | | | 535 | | | | | 540 | | | | | |
| Gln | Cys | Asp | Gly | Arg | Pro | Asp | Cys | Arg | Asp | Gly | Ser | Asp | Glu | Glu | | | | | |
| | | | | 545 | | | | | 550 | | | | | 555 | | | | | |
| His | Cys | Asp | Cys | Gly | Leu | Gln | Gly | Pro | Ser | Ser | Arg | Ile | Val | Gly | | | | | |
| | | | | 560 | | | | | 565 | | | | | 570 | | | | | |
| Gly | Ala | Val | Ser | Ser | Glu | Gly | Glu | Trp | Pro | Trp | Gln | Ala | Ser | Leu | | | | | |
| | | | | 575 | | | | | 580 | | | | | 585 | | | | | |
| Gln | Val | Arg | Gly | Arg | His | Ile | Cys | Gly | Gly | Ala | Leu | Ile | Ala | Asp | | | | | |
| | | | | 590 | | | | | 595 | | | | | 600 | | | | | |
| Arg | Trp | Val | Ile | Thr | Ala | Ala | His | Cys | Phe | Gln | Glu | Asp | Ser | Met | | | | | |
| | | | | 605 | | | | | 610 | | | | | 615 | | | | | |
| Ala | Ser | Thr | Val | Leu | Trp | Thr | Val | Phe | Leu | Gly | Lys | Val | Trp | Gln | | | | | |
| | | | | 620 | | | | | 625 | | | | | 630 | | | | | |
| Asn | Ser | Arg | Trp | Pro | Gly | Glu | Val | Ser | Phe | Lys | Val | Ser | Arg | Leu | | | | | |
| | | | | 635 | | | | | 640 | | | | | 645 | | | | | |
| Leu | Leu | His | Pro | Tyr | His | Glu | Glu | Asp | Ser | His | Asp | Tyr | Asp | Val | | | | | |
| | | | | 650 | | | | | 655 | | | | | 660 | | | | | |
| Ala | Leu | Leu | Gln | Leu | Asp | His | Pro | Val | Val | Arg | Ser | Ala | Ala | Val | | | | | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| | 665 | | 670 | | 675 |
| Arg Pro Val Cys | Leu Pro Ala Arg Ser | His Phe Phe Glu Pro Gly | | | |
| | 680 | 685 | | 690 | |
| Leu His Cys Trp | Ile Thr Gly Trp Gly | Ala Leu Arg Glu Gly Gly | | | |
| | 695 | 700 | | 705 | |
| Pro Ile Ser Asn | Ala Leu Gln Lys Val | Asp Val Gln Leu Ile Pro | | | |
| | 710 | 715 | | 720 | |
| Gln Asp Leu Cys | Ser Glu Ala Tyr Arg | Tyr Gln Val Thr Pro Arg | | | |
| | 725 | 730 | | 735 | |
| Met Leu Cys Ala | Gly Tyr Arg Lys Gly | Lys Lys Asp Ala Cys Gln | | | |
| | 740 | 745 | | 750 | |
| Gly Asp Ser Gly | Gly Pro Leu Val Cys | Lys Ala Leu Ser Gly Arg | | | |
| | 755 | 760 | | 765 | |
| Trp Phe Leu Ala | Gly Leu Val Ser Trp | Gly Leu Gly Cys Gly Arg | | | |
| | 770 | 775 | | 780 | |
| Pro Asn Tyr Phe | Gly Val Tyr Thr Arg | Ile Thr Gly Val Ile Ser | | | |
| | 785 | 790 | | 795 | |
| Trp Ile Gln Gln | Val Val Thr | | | | |
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<210> 173

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 173

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<210> 174

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tgcagtttca acatgacagc taaaaccttt ttcattcattc acggatggac 500
gatgagcggg atctttgaaa actggtgca caaactcgtg tcagccctgc 550
acacaagaga gaaagacgcc aatgtagttg tggttgactg gctccccctg 600
gccaccagc tttacacgga tgcggtcaat aataccaggg tgggtgggaca 650
cagcattgcc aggatgctcg actggctgca ggagaaggac gatttttctc 700
tcgggaatgt ccacttgatc ggctacagcc tcggagcgca cgtggccggg 750
tatgcaggca acttcgtgaa aggaacggtg ggccgaatca caggtttgga 800
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aaaaaaaaaa 1510

<210> 178
<211> 354
<212> PRT
<213> Homo sapiens

<400> 178

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Asn | Ser | Val | Pro | Leu | Leu | Cys | Phe | Trp | Ser | Leu | Cys | Tyr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Cys | Phe | Ala | Ala | Gly | Ser | Pro | Val | Pro | Phe | Gly | Pro | Glu | Gly | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Glu | Asp | Lys | Leu | His | Lys | Pro | Lys | Ala | Thr | Gln | Thr | Glu | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Pro | Ser | Val | Arg | Phe | Asn | Leu | Arg | Thr | Ser | Lys | Asp | Pro | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| His | Glu | Gly | Cys | Tyr | Leu | Ser | Val | Gly | His | Ser | Gln | Pro | Leu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asp | Cys | Ser | Phe | Asn | Met | Thr | Ala | Lys | Thr | Phe | Phe | Ile | Ile | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Trp | Thr | Met | Ser | Gly | Ile | Phe | Glu | Asn | Trp | Leu | His | Lys | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Val | Ser | Ala | Leu | His | Thr | Arg | Glu | Lys | Asp | Ala | Asn | Val | Val | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Asp | Trp | Leu | Pro | Leu | Ala | His | Gln | Leu | Tyr | Thr | Asp | Ala | Val |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Asn | Asn | Thr | Arg | Val | Val | Gly | His | Ser | Ile | Ala | Arg | Met | Leu | Asp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Trp | Leu | Gln | Glu | Lys | Asp | Asp | Phe | Ser | Leu | Gly | Asn | Val | His | Leu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Gly | Tyr | Ser | Leu | Gly | Ala | His | Val | Ala | Gly | Tyr | Ala | Gly | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Phe | Val | Lys | Gly | Thr | Val | Gly | Arg | Ile | Thr | Gly | Leu | Asp | Pro | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Pro | Met | Phe | Glu | Gly | Ala | Asp | Ile | His | Lys | Arg | Leu | Ser | Pro |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Asp | Ala | Asp | Phe | Val | Asp | Val | Leu | His | Thr | Tyr | Thr | Arg | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Phe | Gly | Leu | Ser | Ile | Gly | Ile | Gln | Met | Pro | Val | Gly | His | Ile | Asp |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Tyr | Pro | Asn | Gly | Gly | Asp | Phe | Gln | Pro | Gly | Cys | Gly | Leu | Asn |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Asp | Val | Leu | Gly | Ser | Ile | Ala | Tyr | Gly | Thr | Ile | Thr | Glu | Val | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Lys | Cys | Glu | His | Glu | Arg | Ala | Val | His | Leu | Phe | Val | Asp | Ser | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |

Val Asn Gln Asp Lys Pro Ser Phe Ala Phe Gln Cys Thr Asp Ser
290 295 300

Asn Arg Phe Lys Lys Gly Ile Cys Leu Ser Cys Arg Lys Asn Arg
305 310 315

Cys Asn Ser Ile Gly Tyr Asn Ala Lys Lys Met Arg Asn Lys Arg
320 325 330

Asn Ser Lys Met Tyr Leu Lys Thr Arg Ala Gly Met Pro Phe Arg
335 340 345

Gly Asn Leu Gln Ser Leu Glu Cys Pro
350

<210> 179

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 179

gtgagcatga gcgagccgtc cac 23

<210> 180

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 180

gctattacaa cggttcttgc ggcagc 26

<210> 181

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 181

ttgactctct ggtgaatcag gacaagccga gttttgcctt ccag 44

<210> 182

<211> 3240

<212> DNA

<213> Homo sapiens

<400> 182

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acgcgctgga ggagtggagc agcaccggc cgccctggg ggctgacagt 150
cggcaaagtt tggccgaag aggaagtgg ctcaaacc cggcaggtggc 200
gaccaggcca gaccaggggc gctcgctgcc tgcgggcggg ctgtaggcga 250
gggcgcgcc cagtgccgag acccggggct tcaggagccg gccccgggag 300
agaagagtgc ggcggcggac ggagaaaaca actccaaagt tggcgaaag 350
caccgcccct actccgggc tgcgcgcc tccccgccc cagccctggc 400
atccagagta cgggtcgagc ccgggccatg gagccccct ggggagggcg 450
caccaggag cctgggcgc ccgggctccg ccgcgaccc atcgggtaga 500
ccacagaagc tccgggacc ttccggcacc tctggacagc ccaggatgct 550
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tgggcagaac ctgaggtttt gccatccaca atccctocta cagggcctgg 3150
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tcagtaagtt gaggtcaaaa ataaaggaat catacatctc 3240

<210> 183

<211> 713

<212> PRT

<213> Homo sapiens

<400> 183

Met Leu Leu Ala Thr Leu Leu Leu Leu Leu Leu Gly Gly Ala Leu
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Ala His Pro Asp Arg Ile Ile Phe Pro Asn His Ala Cys Glu Asp
20 25 30

Pro Pro Ala Val Leu Leu Glu Val Gln Gly Thr Leu Gln Arg Pro
35 40 45

Leu Val Arg Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu
50 55 60

Ile Leu Gly Ser Lys Glu Gln Thr Val Thr Ile Arg Phe Gln Lys
65 70 75

Leu His Leu Ala Cys Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro
80 85 90

Leu Gln Pro Leu Ile Ser Leu Cys Glu Ala Pro Pro Ser Pro Leu
95 100 105

Gln Leu Pro Gly Gly Asn Val Thr Ile Thr Tyr Ser Tyr Ala Gly
110 115 120

Ala Arg Ala Pro Met Gly Gln Gly Phe Leu Leu Ser Tyr Ser Gln
125 130 135

Asp Trp Leu Met Cys Leu Gln Glu Glu Phe Gln Cys Leu Asn His
140 145 150

Arg Cys Val Ser Ala Val Gln Arg Cys Asp Gly Val Asp Ala Cys
155 160 165

Gly Asp Gly Ser Asp Glu Ala Gly Cys Ser Ser Asp Pro Phe Pro
170 175 180

Gly Leu Thr Pro Arg Pro Val Pro Ser Leu Pro Cys Asn Val Thr

| | 185 | 190 | 195 |
|-----------------|---------------------|---------------------|-----|
| Leu Glu Asp Phe | Tyr Gly Val Phe Ser | Ser Pro Gly Tyr Thr | His |
| | 200 | 205 | 210 |
| Leu Ala Ser Val | Ser His Pro Gln Ser | Cys His Trp Leu Leu | Asp |
| | 215 | 220 | 225 |
| Pro His Asp Gly | Arg Arg Leu Ala Val | Arg Phe Thr Ala Leu | Asp |
| | 230 | 235 | 240 |
| Leu Gly Phe Gly | Asp Ala Val His Val | Tyr Asp Gly Pro Gly | Pro |
| | 245 | 250 | 255 |
| Pro Glu Ser Ser | Arg Leu Leu Arg Ser | Leu Thr His Phe Ser | Asn |
| | 260 | 265 | 270 |
| Gly Lys Ala Val | Thr Val Glu Thr Leu | Ser Gly Gln Ala Val | Val |
| | 275 | 280 | 285 |
| Ser Tyr His Thr | Val Ala Trp Ser Asn | Gly Arg Gly Phe Asn | Ala |
| | 290 | 295 | 300 |
| Thr Tyr His Val | Arg Gly Tyr Cys Leu | Pro Trp Asp Arg Pro | Cys |
| | 305 | 310 | 315 |
| Gly Leu Gly Ser | Gly Leu Gly Ala Gly | Glu Gly Leu Gly Glu | Arg |
| | 320 | 325 | 330 |
| Cys Tyr Ser Glu | Ala Gln Arg Cys Asp | Gly Ser Trp Asp Cys | Ala |
| | 335 | 340 | 345 |
| Asp Gly Thr Asp | Glu Glu Asp Cys Pro | Gly Cys Pro Pro Gly | His |
| | 350 | 355 | 360 |
| Phe Pro Cys Gly | Ala Ala Gly Thr Ser | Gly Ala Thr Ala Cys | Tyr |
| | 365 | 370 | 375 |
| Leu Pro Ala Asp | Arg Cys Asn Tyr Gln | Thr Phe Cys Ala Asp | Gly |
| | 380 | 385 | 390 |
| Ala Asp Glu Arg | Arg Cys Arg His Cys | Gln Pro Gly Asn Phe | Arg |
| | 395 | 400 | 405 |
| Cys Arg Asp Glu | Lys Cys Val Tyr Glu | Thr Trp Val Cys Asp | Gly |
| | 410 | 415 | 420 |
| Gln Pro Asp Cys | Ala Asp Gly Ser Asp | Glu Trp Asp Cys Ser | Tyr |
| | 425 | 430 | 435 |
| Val Leu Pro Arg | Lys Val Ile Thr Ala | Ala Val Ile Gly Ser | Leu |
| | 440 | 445 | 450 |
| Val Cys Gly Leu | Leu Leu Val Ile Ala | Leu Gly Cys Thr Cys | Lys |
| | 455 | 460 | 465 |
| Leu Tyr Ala Ile | Arg Thr Gln Glu Tyr | Ser Ile Phe Ala Pro | Leu |

| 470 | 475 | 480 |
|-------------------------------------|-------------------------|-----|
| Ser Arg Met Glu Ala Glu Ile Val Gln | Gln Gln Ala Pro Pro Ser | |
| 485 | 490 | 495 |
| Tyr Gly Gln Leu Ile Ala Gln Gly Ala | Ile Pro Pro Val Glu Asp | |
| 500 | 505 | 510 |
| Phe Pro Thr Glu Asn Pro Asn Asp Asn | Ser Val Leu Gly Asn Leu | |
| 515 | 520 | 525 |
| Arg Ser Leu Leu Gln Ile Leu Arg Gln | Asp Met Thr Pro Gly Gly | |
| 530 | 535 | 540 |
| Gly Pro Gly Ala Arg Arg Arg Gln Arg | Gly Arg Leu Met Arg Arg | |
| 545 | 550 | 555 |
| Leu Val Arg Arg Leu Arg Arg Trp Gly | Leu Leu Pro Arg Thr Asn | |
| 560 | 565 | 570 |
| Thr Pro Ala Arg Ala Ser Glu Ala Arg | Ser Gln Val Thr Pro Ser | |
| 575 | 580 | 585 |
| Ala Ala Pro Leu Glu Ala Leu Asp Gly | Gly Thr Gly Pro Ala Arg | |
| 590 | 595 | 600 |
| Glu Gly Gly Ala Val Gly Gly Gln Asp | Gly Glu Gln Ala Pro Pro | |
| 605 | 610 | 615 |
| Leu Pro Ile Lys Ala Pro Leu Pro Ser | Ala Ser Thr Ser Pro Ala | |
| 620 | 625 | 630 |
| Pro Thr Thr Val Pro Glu Ala Pro Gly | Pro Leu Pro Ser Leu Pro | |
| 635 | 640 | 645 |
| Leu Glu Pro Ser Leu Leu Ser Gly Val | Val Gln Ala Leu Arg Gly | |
| 650 | 655 | 660 |
| Arg Leu Leu Pro Ser Leu Gly Pro Pro | Gly Pro Thr Arg Ser Pro | |
| 665 | 670 | 675 |
| Pro Gly Pro His Thr Ala Val Leu Ala | Leu Glu Asp Glu Asp Asp | |
| 680 | 685 | 690 |
| Val Leu Leu Val Pro Leu Ala Glu Pro | Gly Val Trp Val Ala Glu | |
| 695 | 700 | 705 |
| Ala Glu Asp Glu Pro Leu Leu Thr | | |
| 710 | | |

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<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 184
ggctgtcact gtggagacac 20

<210> 185
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 185
gcaaggtcat tacagctg 18

<210> 186
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 186
agaacatagg agcagtccca ctc 23

<210> 187
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 187
tgcctgctgc tgcacaatct cag 23

<210> 188
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 188
ggctattgct tgccttggga cagaccctgt ggcttaggct ctggc 45

<210> 189
<211> 663
<212> DNA
<213> Homo sapiens

<400> 189
cgagctgggc gagaagtagg ggagggcggt gctccgccgc ggtggcggtt 50
gctatcgctt cgcagaacct actcaggcag ccagctgaga agagttgagg 100

gaaagtgctg ctgctgggtc tgcagacgcg atggataacg tgcagccgaa 150
 aataaaacat cgcccccttct gcttcagtgt gaaaggccac gtgaagatgc 200
 tgcggctggc actaactgtg acatctatga ccttttttat catcgcaaaa 250
 gccctgaac catatattgt tatcactgga tttgaagtca ccgttatctt 300
 atttttcata cttttatatg tactcagact tgatcgatta atgaagtgg 350
 tattttggcc tttgcttgat attatcaact cactggtaac aacagtattc 400
 atgctcatcg tatctgtgtt ggcactgata ccagaaacca caacattgac 450
 agttgggtgga ggggtgtttg cacttgtagc agcagtatgc tgtcttgccg 500
 acggggccct tatttaccgg aagcttctgt tcaatcccag cggtccttac 550
 cagaaaaagc ctgtgcatga aaaaaaagaa gttttgtaat tttatattac 600
 ttttagttt gatactaagt attaaacata tttctgtatt cttccaaaaa 650
 aaaaaaaaaa aaa 663

<210> 190

<211> 152

<212> PRT

<213> Homo sapiens

<400> 190

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Asp | Asn | Val | Gln | Pro | Lys | Ile | Lys | His | Arg | Pro | Phe | Cys | Phe | 1 | 5 | 10 | 15 |
| Ser | Val | Lys | Gly | His | Val | Lys | Met | Leu | Arg | Leu | Ala | Leu | Thr | Val | 20 | 25 | 30 | |
| Thr | Ser | Met | Thr | Phe | Phe | Ile | Ile | Ala | Gln | Ala | Pro | Glu | Pro | Tyr | 35 | 40 | 45 | |
| Ile | Val | Ile | Thr | Gly | Phe | Glu | Val | Thr | Val | Ile | Leu | Phe | Phe | Ile | 50 | 55 | 60 | |
| Leu | Leu | Tyr | Val | Leu | Arg | Leu | Asp | Arg | Leu | Met | Lys | Trp | Leu | Phe | 65 | 70 | 75 | |
| Trp | Pro | Leu | Leu | Asp | Ile | Ile | Asn | Ser | Leu | Val | Thr | Thr | Val | Phe | 80 | 85 | 90 | |
| Met | Leu | Ile | Val | Ser | Val | Leu | Ala | Leu | Ile | Pro | Glu | Thr | Thr | Thr | 95 | 100 | 105 | |
| Leu | Thr | Val | Gly | Gly | Gly | Val | Phe | Ala | Leu | Val | Thr | Ala | Val | Cys | 110 | 115 | 120 | |
| Cys | Leu | Ala | Asp | Gly | Ala | Leu | Ile | Tyr | Arg | Lys | Leu | Leu | Phe | Asn | 125 | 130 | 135 | |

Pro Ser Gly Pro Tyr Gln Lys Lys Pro Val His Glu Lys Lys Glu
140 145 150

Val Leu

<210> 191
<211> 495
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 78, 212, 234, 487
<223> unknown base

<400> 191
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ttttgcagaa cctactcagg cagccagntg agaagagttg agggaaagtg 100
ctgctgctgg gtctgcagac gcgatggata acgtgcagcc gaaaataaaa 150
catcgcccct tctgcttcag tgtgaaaggc cacgtgaaga tgctgcggct 200
ggcactaact gngacatcta tgaccttttt tatnatcgca caagcccctg 250
aaccatatat tgttatcact ggatttgaag tcaccgttat cttatttttc 300
atacttttat atgtactcag acttgatcga ttaatgaagt ggttattttg 350
gcctttgctt gatattatca actcactggg aacaacagta ttcattgctca 400
tcgtatctgt gttggcactg ataccagaaa ccacaacatt gacagttggg 450
ggaggggtgt ttgcacttgt gacagcagta tgctgtnttg ccgac 495

<210> 192
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 192
cgttttgcag aacctactca ggcag 25

<210> 193
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 193

cctccaccaa ctgtcaatgt tgtgg 25

<210> 194

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 194

aaagtgctgc tgctgggtct gcagacgcga tggataacgt 40

<210> 195

<211> 1879

<212> DNA

<213> Homo sapien

<400> 195

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ggaccggcta ggctgggcgc gccccccggg ccccgccgtg ggcattggcg 100

cactggcccc ggcgctgctg ctgcctctgc tggcccagtg gtcctgctgc 150

gccgccccgg agctggcccc cgcgcccttc acgtgcccc tccgggtggc 200

cgcggccacg aaccgcgtag ttgcgcccac cccgggaccc gggaccctg 250

ccgagcgcca cgccgacggc ttggcgctcg ccttgagacc tgccctggcg 300

tccccgcggg gcgcgcgcaa cttcttggcc atggtagaca acctgcaggg 350

ggactctggc cgcggtact acctggagat gctgatcggg accccccgc 400

agaagctaca gattctcggt gacactggaa gcagtaactt tgccgtggca 450

ggaacccccgc actcctacat agacacgtac tttgacacag agaggtctag 500

cacataccgc tccaagggct ttgacgtcac agtgaagtac acacaaggaa 550

gctggacggg cttcggttggg gaagacctcg tcaccatccc caaaggcttc 600

aatacttctt ttcttgtcaa cattgccact atttttgaat cagagaattt 650

ctttttgcct gggattaaat ggaatggaat acttggccta gcttatgcca 700

cacttgccaa gccatcaagt tctctggaga ccttcttoga ctccctggtg 750

acacaagcaa acatccccaa cgttttctcc atgcagatgt gtggagccgg 800

cttgcccgtt gctggatctg ggaccaacgg aggtagtctt gtcttggtg 850

gaattgaacc aagtttgtat aaaggagaca tctggtatac cctattaag 900

gaagagtggg actaccagat agaaattctg aaattggaaa ttggaggcca 950

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<210> 196

<211> 518

<212> PRT

<213> Homo sapien

<400> 196

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| Met | Gly | Ala | Leu | Ala | Arg | Ala | Leu | Leu | Leu | Pro | Leu | Leu | Ala | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Leu | Arg | Ala | Ala | Pro | Glu | Leu | Ala | Pro | Ala | Pro | Phe | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Arg | Val | Ala | Ala | Ala | Thr | Asn | Arg | Val | Val | Ala | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Pro | Gly | Pro | Gly | Thr | Pro | Ala | Glu | Arg | His | Ala | Asp | Gly | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Ala | Leu | Ala | Leu | Glu | Pro | Ala | Leu | Ala | Ser | Pro | Ala | Gly | Ala | Ala | | 65 | 70 | 75 |
| Asn | Phe | Leu | Ala | Met | Val | Asp | Asn | Leu | Gln | Gly | Asp | Ser | Gly | Arg | | 80 | 85 | 90 |
| Gly | Tyr | Tyr | Leu | Glu | Met | Leu | Ile | Gly | Thr | Pro | Pro | Gln | Lys | Leu | | 95 | 100 | 105 |
| Gln | Ile | Leu | Val | Asp | Thr | Gly | Ser | Ser | Asn | Phe | Ala | Val | Ala | Gly | | 110 | 115 | 120 |
| Thr | Pro | His | Ser | Tyr | Ile | Asp | Thr | Tyr | Phe | Asp | Thr | Glu | Arg | Ser | | 125 | 130 | 135 |
| Ser | Thr | Tyr | Arg | Ser | Lys | Gly | Phe | Asp | Val | Thr | Val | Lys | Tyr | Thr | | 140 | 145 | 150 |
| Gln | Gly | Ser | Trp | Thr | Gly | Phe | Val | Gly | Glu | Asp | Leu | Val | Thr | Ile | | 155 | 160 | 165 |
| Pro | Lys | Gly | Phe | Asn | Thr | Ser | Phe | Leu | Val | Asn | Ile | Ala | Thr | Ile | | 170 | 175 | 180 |
| Phe | Glu | Ser | Glu | Asn | Phe | Phe | Leu | Pro | Gly | Ile | Lys | Trp | Asn | Gly | | 185 | 190 | 195 |
| Ile | Leu | Gly | Leu | Ala | Tyr | Ala | Thr | Leu | Ala | Lys | Pro | Ser | Ser | Ser | | 200 | 205 | 210 |
| Leu | Glu | Thr | Phe | Phe | Asp | Ser | Leu | Val | Thr | Gln | Ala | Asn | Ile | Pro | | 215 | 220 | 225 |
| Asn | Val | Phe | Ser | Met | Gln | Met | Cys | Gly | Ala | Gly | Leu | Pro | Val | Ala | | 230 | 235 | 240 |
| Gly | Ser | Gly | Thr | Asn | Gly | Gly | Ser | Leu | Val | Leu | Gly | Gly | Ile | Glu | | 245 | 250 | 255 |
| Pro | Ser | Leu | Tyr | Lys | Gly | Asp | Ile | Trp | Tyr | Thr | Pro | Ile | Lys | Glu | | 260 | 265 | 270 |
| Glu | Trp | Tyr | Tyr | Gln | Ile | Glu | Ile | Leu | Lys | Leu | Glu | Ile | Gly | Gly | | 275 | 280 | 285 |
| Gln | Ser | Leu | Asn | Leu | Asp | Cys | Arg | Glu | Tyr | Asn | Ala | Asp | Lys | Ala | | 290 | 295 | 300 |
| Ile | Val | Asp | Ser | Gly | Thr | Thr | Leu | Leu | Arg | Leu | Pro | Gln | Lys | Val | | 305 | 310 | 315 |
| Phe | Asp | Ala | Val | Val | Glu | Ala | Val | Ala | Arg | Ala | Ser | Leu | Ile | Pro | | 320 | 325 | 330 |
| Glu | Phe | Ser | Asp | Gly | Phe | Trp | Thr | Gly | Ser | Gln | Leu | Ala | Cys | Trp | | 335 | 340 | 345 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asn | Ser | Glu | Thr | Pro | Trp | Ser | Tyr | Phe | Pro | Lys | Ile | Ser | Ile | 350 | 355 | 360 |
| Tyr | Leu | Arg | Asp | Glu | Asn | Ser | Ser | Arg | Ser | Phe | Arg | Ile | Thr | Ile | 365 | 370 | 375 |
| Leu | Pro | Gln | Leu | Tyr | Ile | Gln | Pro | Met | Met | Gly | Ala | Gly | Leu | Asn | 380 | 385 | 390 |
| Tyr | Glu | Cys | Tyr | Arg | Phe | Gly | Ile | Ser | Pro | Ser | Thr | Asn | Ala | Leu | 395 | 400 | 405 |
| Val | Ile | Gly | Ala | Thr | Val | Met | Glu | Gly | Phe | Tyr | Val | Ile | Phe | Asp | 410 | 415 | 420 |
| Arg | Ala | Gln | Lys | Arg | Val | Gly | Phe | Ala | Ala | Ser | Pro | Cys | Ala | Glu | 425 | 430 | 435 |
| Ile | Ala | Gly | Ala | Ala | Val | Ser | Glu | Ile | Ser | Gly | Pro | Phe | Ser | Thr | 440 | 445 | 450 |
| Glu | Asp | Val | Ala | Ser | Asn | Cys | Val | Pro | Ala | Gln | Ser | Leu | Ser | Glu | 455 | 460 | 465 |
| Pro | Ile | Leu | Trp | Ile | Val | Ser | Tyr | Ala | Leu | Met | Ser | Val | Cys | Gly | 470 | 475 | 480 |
| Ala | Ile | Leu | Leu | Val | Leu | Ile | Val | Leu | Leu | Leu | Leu | Pro | Phe | Arg | 485 | 490 | 495 |
| Cys | Gln | Arg | Arg | Pro | Arg | Asp | Pro | Glu | Val | Val | Asn | Asp | Glu | Ser | 500 | 505 | 510 |
| Ser | Leu | Val | Arg | His | Arg | Trp | Lys | | | | | | | | 515 | | |

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<223> Synthetic oligonucleotide probe

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<210> 198

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<211> 377

<212> PRT

<213> Homo sapiens

<400> 206

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
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| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Val | Tyr | Tyr | Asn | Leu | Val | Lys | Ala | Pro | Pro | Cys | Gly | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Asn | Leu | Arg | Gly | Arg | Thr | Ala | Val | Val | Thr | Gly | Ala | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gly | Ile | Gly | Lys | Met | Thr | Ala | Leu | Glu | Leu | Ala | Arg | Arg | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Val | Val | Leu | Ala | Cys | Arg | Ser | Gln | Glu | Arg | Gly | Glu | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Ala | Phe | Asp | Leu | Arg | Gln | Glu | Ser | Gly | Asn | Asn | Glu | Val | Ile | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Phe | Met | Ala | Leu | Asp | Leu | Ala | Ser | Leu | Ala | Ser | Val | Arg | Ala | Phe | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Thr | Ala | Phe | Leu | Ser | Ser | Glu | Pro | Arg | Leu | Asp | Ile | Leu | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| His | Asn | Ala | Gly | Ile | Ser | Ser | Cys | Gly | Arg | Thr | Arg | Glu | Ala | Phe | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asn | Leu | Leu | Leu | Arg | Val | Asn | His | Ile | Gly | Pro | Phe | Leu | Leu | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| His | Leu | Leu | Leu | Pro | Cys | Leu | Lys | Ala | Cys | Ala | Pro | Ser | Arg | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Val | Val | Ala | Ser | Ala | Ala | His | Cys | Arg | Gly | Arg | Leu | Asp | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Arg | Leu | Asp | Arg | Pro | Val | Val | Gly | Trp | Arg | Gln | Glu | Leu | Arg | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Tyr | Ala | Asp | Thr | Lys | Leu | Ala | Asn | Val | Leu | Phe | Ala | Arg | Glu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Ala | Asn | Gln | Leu | Glu | Ala | Thr | Gly | Val | Thr | Cys | Tyr | Ala | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| His | Pro | Gly | Pro | Val | Asn | Ser | Glu | Leu | Phe | Leu | Arg | His | Val | Pro | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Trp | Leu | Arg | Pro | Leu | Leu | Arg | Pro | Leu | Ala | Trp | Leu | Val | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Ala | Pro | Arg | Gly | Gly | Ala | Gln | Thr | Pro | Leu | Tyr | Cys | Ala | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Glu | Gly | Ile | Glu | Pro | Leu | Ser | Gly | Arg | Tyr | Phe | Ala | Asn | Cys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| His | Val | Glu | Glu | Val | Pro | Pro | Ala | Ala | Arg | Asp | Asp | Arg | Ala | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| His | Arg | Leu | Trp | Glu | Ala | Ser | Lys | Arg | Leu | Ala | Gly | Leu | Gly | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gly | Glu | Asp | Ala | Glu | Pro | Asp | Glu | Asp | Pro | Gln | Ser | Glu | Asp | Ser | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Ala | Pro | Ser | Ser | Leu | Ser | Thr | Pro | His | Pro | Glu | Glu | Pro | Thr | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Val | Ser | Gln | Pro | Tyr | Pro | Ser | Pro | Gln | Ser | Ser | Pro | Asp | Leu | Ser | |
| | | | | 350 | | | | | 355 | | | | | 360 | |

Lys Met Thr His Arg Ile Gln Ala Lys Val Glu Pro Glu Ile Gln
365 370 375

Leu Ser

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<210> 209
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 tatgagaccg taggtcaaaa gcaccatcct cgtactgttg tcactatgag 3650
 cttaagaaat ttgataccat aaaatggtaa aaaaaaaaaa aaaaaaaaaa 3700
 aaaaaaaaaa aaaaaa 3716

<210> 211
 <211> 985
 <212> PRT
 <213> Homo sapiens

<400> 211
 Met Gly Gly Met Ala Gln Asp Ser Pro Pro Gln Ile Leu Val His
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 Pro Gln Asp Gln Leu Phe Gln Gly Pro Gly Pro Ala Arg Met Ser
 20 25 30
 Cys Gln Ala Ser Gly Gln Pro Pro Pro Thr Ile Arg Trp Leu Leu
 35 40 45
 Asn Gly Gln Pro Leu Ser Met Val Pro Pro Asp Pro His His Leu
 50 55 60
 Leu Pro Asp Gly Thr Leu Leu Leu Leu Gln Pro Pro Ala Arg Gly
 65 70 75
 His Ala His Asp Gly Gln Ala Leu Ser Thr Asp Leu Gly Val Tyr
 80 85 90
 Thr Cys Glu Ala Ser Asn Arg Leu Gly Thr Ala Val Ser Arg Gly
 95 100 105
 Ala Arg Leu Ser Val Ala Val Leu Arg Glu Asp Phe Gln Ile Gln
 110 115 120
 Pro Arg Asp Met Val Ala Val Val Gly Glu Gln Phe Thr Leu Glu
 125 130 135

| | | | |
|---|-----|-----|-----|
| Cys Gly Pro Pro Trp Gly His Pro Glu Pro Thr Val Ser Trp Trp | 140 | 145 | 150 |
| Lys Asp Gly Lys Pro Leu Ala Leu Gln Pro Gly Arg His Thr Val | 155 | 160 | 165 |
| Ser Gly Gly Ser Leu Leu Met Ala Arg Ala Glu Lys Ser Asp Glu | 170 | 175 | 180 |
| Gly Thr Tyr Met Cys Val Ala Thr Asn Ser Ala Gly His Arg Glu | 185 | 190 | 195 |
| Ser Arg Ala Ala Arg Val Ser Ile Gln Glu Pro Gln Asp Tyr Thr | 200 | 205 | 210 |
| Glu Pro Val Glu Leu Leu Ala Val Arg Ile Gln Leu Glu Asn Val | 215 | 220 | 225 |
| Thr Leu Leu Asn Pro Asp Pro Ala Glu Gly Pro Lys Pro Arg Pro | 230 | 235 | 240 |
| Ala Val Trp Leu Ser Trp Lys Val Ser Gly Pro Ala Ala Pro Ala | 245 | 250 | 255 |
| Gln Ser Tyr Thr Ala Leu Phe Arg Thr Gln Thr Ala Pro Gly Gly | 260 | 265 | 270 |
| Gln Gly Ala Pro Trp Ala Glu Glu Leu Leu Ala Gly Trp Gln Ser | 275 | 280 | 285 |
| Ala Glu Leu Gly Gly Leu His Trp Gly Gln Asp Tyr Glu Phe Lys | 290 | 295 | 300 |
| Val Arg Pro Ser Ser Gly Arg Ala Arg Gly Pro Asp Ser Asn Val | 305 | 310 | 315 |
| Leu Leu Leu Arg Leu Pro Glu Lys Val Pro Ser Ala Pro Pro Gln | 320 | 325 | 330 |
| Glu Val Thr Leu Lys Pro Gly Asn Gly Thr Val Phe Val Ser Trp | 335 | 340 | 345 |
| Val Pro Pro Pro Ala Glu Asn His Asn Gly Ile Ile Arg Gly Tyr | 350 | 355 | 360 |
| Gln Val Trp Ser Leu Gly Asn Thr Ser Leu Pro Pro Ala Asn Trp | 365 | 370 | 375 |
| Thr Val Val Gly Glu Gln Thr Gln Leu Glu Ile Ala Thr His Met | 380 | 385 | 390 |
| Pro Gly Ser Tyr Cys Val Gln Val Ala Ala Val Thr Gly Ala Gly | 395 | 400 | 405 |
| Ala Gly Glu Pro Ser Arg Pro Val Cys Leu Leu Leu Glu Gln Ala | 410 | 415 | 420 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Met | Glu | Arg | Ala | Thr | Gln | Glu | Pro | Ser | Glu | His | Gly | Pro | Trp | Thr | | 425 | 430 | 435 |
| Leu | Glu | Gln | Leu | Arg | Ala | Thr | Leu | Lys | Arg | Pro | Glu | Val | Ile | Ala | | 440 | 445 | 450 |
| Thr | Cys | Gly | Val | Ala | Leu | Trp | Leu | Leu | Leu | Leu | Gly | Thr | Ala | Val | | 455 | 460 | 465 |
| Cys | Ile | His | Arg | Arg | Arg | Arg | Ala | Arg | Val | His | Leu | Gly | Pro | Gly | | 470 | 475 | 480 |
| Leu | Tyr | Arg | Tyr | Thr | Ser | Glu | Asp | Ala | Ile | Leu | Lys | His | Arg | Met | | 485 | 490 | 495 |
| Asp | His | Ser | Asp | Ser | Gln | Trp | Leu | Ala | Asp | Thr | Trp | Arg | Ser | Thr | | 500 | 505 | 510 |
| Ser | Gly | Ser | Arg | Asp | Leu | Ser | Ser | Ser | Ser | Ser | Leu | Ser | Ser | Arg | | 515 | 520 | 525 |
| Leu | Gly | Ala | Asp | Ala | Arg | Asp | Pro | Leu | Asp | Cys | Arg | Arg | Ser | Leu | | 530 | 535 | 540 |
| Leu | Ser | Trp | Asp | Ser | Arg | Ser | Pro | Gly | Val | Pro | Leu | Leu | Pro | Asp | | 545 | 550 | 555 |
| Thr | Ser | Thr | Phe | Tyr | Gly | Ser | Leu | Ile | Ala | Glu | Leu | Pro | Ser | Ser | | 560 | 565 | 570 |
| Thr | Pro | Ala | Arg | Pro | Ser | Pro | Gln | Val | Pro | Ala | Val | Arg | Arg | Leu | | 575 | 580 | 585 |
| Pro | Pro | Gln | Leu | Ala | Gln | Leu | Ser | Ser | Pro | Cys | Ser | Ser | Ser | Asp | | 590 | 595 | 600 |
| Ser | Leu | Cys | Ser | Arg | Arg | Gly | Leu | Ser | Ser | Pro | Arg | Leu | Ser | Leu | | 605 | 610 | 615 |
| Ala | Pro | Ala | Glu | Ala | Trp | Lys | Ala | Lys | Lys | Lys | Gln | Glu | Leu | Gln | | 620 | 625 | 630 |
| His | Ala | Asn | Ser | Ser | Pro | Leu | Leu | Arg | Gly | Ser | His | Ser | Leu | Glu | | 635 | 640 | 645 |
| Leu | Arg | Ala | Cys | Glu | Leu | Gly | Asn | Arg | Gly | Ser | Lys | Asn | Leu | Ser | | 650 | 655 | 660 |
| Gln | Ser | Pro | Gly | Ala | Val | Pro | Gln | Ala | Leu | Val | Ala | Trp | Arg | Ala | | 665 | 670 | 675 |
| Leu | Gly | Pro | Lys | Leu | Leu | Ser | Ser | Ser | Asn | Glu | Leu | Val | Thr | Arg | | 680 | 685 | 690 |
| His | Leu | Pro | Pro | Ala | Pro | Leu | Phe | Pro | His | Glu | Thr | Pro | Pro | Thr | | 695 | 700 | 705 |

| | | | |
|---|-----|-----|-----|
| Gln Ser Gln Gln Thr Gln Pro Pro Val Ala Pro Gln Ala Pro Ser | 710 | 715 | 720 |
| Ser Ile Leu Leu Pro Ala Ala Pro Ile Pro Ile Leu Ser Pro Cys | 725 | 730 | 735 |
| Ser Pro Pro Ser Pro Gln Ala Ser Ser Leu Ser Gly Pro Ser Pro | 740 | 745 | 750 |
| Ala Ser Ser Arg Leu Ser Ser Ser Ser Leu Ser Ser Leu Gly Glu | 755 | 760 | 765 |
| Asp Gln Asp Ser Val Leu Thr Pro Glu Glu Val Ala Leu Cys Leu | 770 | 775 | 780 |
| Glu Leu Ser Glu Gly Glu Glu Thr Pro Arg Asn Ser Val Ser Pro | 785 | 790 | 795 |
| Met Pro Arg Ala Pro Ser Pro Pro Thr Thr Tyr Gly Tyr Ile Ser | 800 | 805 | 810 |
| Val Pro Thr Ala Ser Glu Phe Thr Asp Met Gly Arg Thr Gly Gly | 815 | 820 | 825 |
| Gly Val Gly Pro Lys Gly Gly Val Leu Leu Cys Pro Pro Arg Pro | 830 | 835 | 840 |
| Cys Leu Thr Pro Thr Pro Ser Glu Gly Ser Leu Ala Asn Gly Trp | 845 | 850 | 855 |
| Gly Ser Ala Ser Glu Asp Asn Ala Ala Ser Ala Arg Ala Ser Leu | 860 | 865 | 870 |
| Val Ser Ser Ser Asp Gly Ser Phe Leu Ala Asp Ala His Phe Ala | 875 | 880 | 885 |
| Arg Ala Leu Ala Val Ala Val Asp Ser Phe Gly Phe Gly Leu Glu | 890 | 895 | 900 |
| Pro Arg Glu Ala Asp Cys Val Phe Ile Asp Ala Ser Ser Pro Pro | 905 | 910 | 915 |
| Ser Pro Arg Asp Glu Ile Phe Leu Thr Pro Asn Leu Ser Leu Pro | 920 | 925 | 930 |
| Leu Trp Glu Trp Arg Pro Asp Trp Leu Glu Asp Met Glu Val Ser | 935 | 940 | 945 |
| His Thr Gln Arg Leu Gly Arg Gly Met Pro Pro Trp Pro Pro Asp | 950 | 955 | 960 |
| Ser Gln Ile Ser Ser Gln Arg Ser Gln Leu His Cys Arg Met Pro | 965 | 970 | 975 |
| Lys Ala Gly Ala Ser Pro Val Asp Tyr Ser | 980 | 985 | |

<210> 212
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 212
gaagggacct acatgtgtgt ggcc 24

<210> 213
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 213
actgaccttc cagctgagcc acac 24

<210> 214
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 214
aggactacac ggagcctgtg gagcttctgg ctgtgcgaat tcagctggaa 50

<210> 215
<211> 2749
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1869, 1887
<223> unknown base

<400> 215
ctcccacggt gtccagcgcc cagaatgcgg cttctgggtcc tgctatgggg 50

ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaaatca 100

gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150

ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200

tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250

agggcagggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300

accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtgggggt 350
cgaaaaacgg ggccccgatg agtctttact gatctctctg ttcgtctttc 400
caggaccctg ctgtcctccc tccccctctc ccaccttcca gcctctggct 450
acaacacgcc tgcagcccaa ggcaaaagct cagcaaacc agccccagg 500
attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550
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tcacgcttga ctgcggagga aaaggaagcc ccttcccagg cccctgaggg 950
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cagtgaagca gtatggctgg ctggatcagc accgattccc gaaagctttc 1100
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cagcagggcc agacaaggct cagtggatct ggtctgagtt tcaatctgcc 1350
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 acagaagtgg ttgcctttnc catttgcctt ccctggncca tgccttcttg 1900
 cctttggaaa aaatgatgaa gaaaaccttg gctccttcct tgtctggaaa 1950
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 ctttttagtag agatgggggtt tcaccatgtt ggccaggctg gtcttgaact 2350
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<210> 216

<211> 332

<212> PRT

<213> Homo sapiens

<400> 216

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Leu | Val | Leu | Leu | Trp | Gly | Cys | Leu | Leu | Leu | Pro | Gly |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Glu | Ala | Leu | Glu | Gly | Pro | Glu | Glu | Ile | Ser | Gly | Phe | Glu | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Thr | Val | Ser | Leu | Gln | Cys | Thr | Tyr | Arg | Glu | Glu | Leu | Arg | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Arg | Lys | Tyr | Trp | Cys | Arg | Lys | Gly | Gly | Ile | Leu | Phe | Ser | Arg |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

[illegible]

<210> 217
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 217
ccctgcagtg cacctacagg gaag 24

<210> 218
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 218
ctgtcttccc ctgcttggt gtgg 24

<210> 219
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 219
ggtgcaggaa ggggtgggata ctcttctctc gctgctctgg ccacata 47

<210> 220
<211> 950
<212> DNA
<213> Homo sapiens

<400> 220
ttgtgactaa aagctggcct agcaggccag ggagtgcagc tgcaggcgtg 50
ggggtggcag gagccgcaga gccagagcag acagccgaga aacagggtga 100
cagtgtgaaa gaaccagtgg tctcgctctg ttgccaggc tagagtgtac 150
tggcgtgata atagctcact gcagcctcag actcctggac ttgagaaatc 200
ctcctgcctt agcctcctgc atatctggga ctccaggggt gcactcaagc 250
cctgtttctt ctccttctgt gaggggacca cggaggctgg tgagctgcct 300
gtcatcccaa agctcagctc tgagccagag tgggtggtggc tccacctctg 350
ccgccggcat agaagccagg agcagggtc tcagaaggcg gtggtgcca 400

gctgggatca tgttggtggc cctggtctgt ctgctcagct gcctgctacc 450
 ctccagttag gccaaactct acggtcggtg tgaactggcc agagtgtac 500
 atgacttcgg gctggacgga taccggggat acagcctggc tgactgggtc 550
 tgccttgctt atttcacaag cggtttcaac gcagctgctt tggactacga 600
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 tcagatttgt tgaatcctaa tctcaaggat accgttatct gtgccatgaa 750
 gataacccaa gaggctcagg gtctgggtta ctgggaggcc tggaggcatc 800
 actgccaggg aaaagacctc actgaatggg tggatggctg tgacttctag 850
 gatggacgga accatgcaca gcaggctggg aaatgtgggt tggttcctga 900
 cctaggcttg ggaagacaag ccagcgaata aaggatgggt gaacgtgaaa 950

<210> 221

<211> 146

<212> PRT

<213> Homo sapiens

<400> 221

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Leu | Ala | Leu | Val | Cys | Leu | Leu | Ser | Cys | Leu | Leu | Pro | Ser | 1 | 5 | 10 | 15 |
| Ser | Glu | Ala | Lys | Leu | Tyr | Gly | Arg | Cys | Glu | Leu | Ala | Arg | Val | Leu | 20 | 25 | 30 | |
| His | Asp | Phe | Gly | Leu | Asp | Gly | Tyr | Arg | Gly | Tyr | Ser | Leu | Ala | Asp | 35 | 40 | 45 | |
| Trp | Val | Cys | Leu | Ala | Tyr | Phe | Thr | Ser | Gly | Phe | Asn | Ala | Ala | Ala | 50 | 55 | 60 | |
| Leu | Asp | Tyr | Glu | Ala | Asp | Gly | Ser | Thr | Asn | Asn | Gly | Ile | Phe | Gln | 65 | 70 | 75 | |
| Ile | Asn | Ser | Arg | Arg | Trp | Cys | Ser | Asn | Leu | Thr | Pro | Asn | Val | Pro | 80 | 85 | 90 | |
| Asn | Val | Cys | Arg | Met | Tyr | Cys | Ser | Asp | Leu | Leu | Asn | Pro | Asn | Leu | 95 | 100 | 105 | |
| Lys | Asp | Thr | Val | Ile | Cys | Ala | Met | Lys | Ile | Thr | Gln | Glu | Pro | Gln | 110 | 115 | 120 | |
| Gly | Leu | Gly | Tyr | Trp | Glu | Ala | Trp | Arg | His | His | Cys | Gln | Gly | Lys | 125 | 130 | 135 | |
| Asp | Leu | Thr | Glu | Trp | Val | Asp | Gly | Cys | Asp | Phe | 140 | 145 | | | | | | |

<210> 222
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 222
gggatcatgt tgttgccct ggtc 24

<210> 223
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 223
gcaaggcaga ccagtcagc cag 23

<210> 224
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 224
ctgcctgcta ccctccaagt gaggccaagc tctacggtcg ttgtg 45

<210> 225
<211> 2049
<212> DNA
<213> Homo sapiens

<400> 225
agccgctgcc ccgggccggg cgcccgcggc ggcaccatga gtccccgctc 50
gtgcctgcgt tcgctgcgcc tctcgtctt cgccgtcttc tcagccgccg 100
cgagcaactg gctgtacctg gccaaactgt cgtcgggtgg gagcatctca 150
gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcagggtgca 200
gatgtgcaag cggaacctgg aagtcattga ctccgtgcgc cgcggtgccc 250
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gactcgggag gcggccttcg tgtacgccaat ctcttcggca ggtgtggcct 400
ttgcagtgac gcgggcgtgc agcagtgggg agctggagaa gtgcggctgt 450

gacaggacag tgcattgggt cagcccacag ggcttccagt ggtcaggatg 500
ctctgacaac atcgctacg gtgtggcctt ctcacagtcg tttgtggatg 550
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cacaacaatg aggcggcag gaaggccatc ctgacacaca tgcgggtgga 650
atgcaagtgc cacggggtgt caggctcctg tgaggtaaag acgtgctggc 700
gagcgtgccc gcccttccgc cagggtgggtc acgcactgaa ggagaagttt 750
gatggtgcca ctgaggtgga gccacgccgc gtgggctcct ccagggcact 800
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aaacagtctc ccaccaccta cccaagaga tactggttgt attttttgtt 1200
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ccctgagaaa gggaacaagc agataccagg tcaagggcac caggttcatt 1650
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agaccacact aggcaggcat ataggctgcc atcctggacc agggatcccg 1850

gctgtgcctt tgcagtcac cccgagtcac ctttcacagc gctgttcctc 1900
catgaaactg aaaaacacac acacacacac acacacacac acacacacac 1950
acacacacac ggacacacac acacacctgc gagagagagg gaggaaaggg 2000
ctgtgccttt gcagtcacgc ccgagtcacc tttcacagca ctgttcctc 2049

<210> 226

<211> 351

<212> PRT

<213> Homo sapiens

<400> 226

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Pro | Arg | Ser | Cys | Leu | Arg | Ser | Leu | Arg | Leu | Leu | Val | Phe | 1 | 5 | 10 | 15 |
| Ala | Val | Phe | Ser | Ala | Ala | Ala | Ser | Asn | Trp | Leu | Tyr | Leu | Ala | Lys | 20 | 25 | 30 | |
| Leu | Ser | Ser | Val | Gly | Ser | Ile | Ser | Glu | Glu | Glu | Thr | Cys | Glu | Lys | 35 | 40 | 45 | |
| Leu | Lys | Gly | Leu | Ile | Gln | Arg | Gln | Val | Gln | Met | Cys | Lys | Arg | Asn | 50 | 55 | 60 | |
| Leu | Glu | Val | Met | Asp | Ser | Val | Arg | Arg | Gly | Ala | Gln | Leu | Ala | Ile | 65 | 70 | 75 | |
| Glu | Glu | Cys | Gln | Tyr | Gln | Phe | Arg | Asn | Arg | Arg | Trp | Asn | Cys | Ser | 80 | 85 | 90 | |
| Thr | Leu | Asp | Ser | Leu | Pro | Val | Phe | Gly | Lys | Val | Val | Thr | Gln | Gly | 95 | 100 | 105 | |
| Thr | Arg | Glu | Ala | Ala | Phe | Val | Tyr | Ala | Ile | Ser | Ser | Ala | Gly | Val | 110 | 115 | 120 | |
| Ala | Phe | Ala | Val | Thr | Arg | Ala | Cys | Ser | Ser | Gly | Glu | Leu | Glu | Lys | 125 | 130 | 135 | |
| Cys | Gly | Cys | Asp | Arg | Thr | Val | His | Gly | Val | Ser | Pro | Gln | Gly | Phe | 140 | 145 | 150 | |
| Gln | Trp | Ser | Gly | Cys | Ser | Asp | Asn | Ile | Ala | Tyr | Gly | Val | Ala | Phe | 155 | 160 | 165 | |
| Ser | Gln | Ser | Phe | Val | Asp | Val | Arg | Glu | Arg | Ser | Lys | Gly | Ala | Ser | 170 | 175 | 180 | |
| Ser | Ser | Arg | Ala | Leu | Met | Asn | Leu | His | Asn | Asn | Glu | Ala | Gly | Arg | 185 | 190 | 195 | |
| Lys | Ala | Ile | Leu | Thr | His | Met | Arg | Val | Glu | Cys | Lys | Cys | His | Gly | 200 | 205 | 210 | |
| Val | Ser | Gly | Ser | Cys | Glu | Val | Lys | Thr | Cys | Trp | Arg | Ala | Val | Pro | | | | |

| | 215 | 220 | 225 |
|---|-----|-----|-----|
| Pro Phe Arg Gln Val Gly His Ala Leu Lys Glu Lys Phe Asp Gly | 230 | 235 | 240 |
| Ala Thr Glu Val Glu Pro Arg Arg Val Gly Ser Ser Arg Ala Leu | 245 | 250 | 255 |
| Val Pro Arg Asn Ala Gln Phe Lys Pro His Thr Asp Glu Asp Leu | 260 | 265 | 270 |
| Val Tyr Leu Glu Pro Ser Pro Asp Phe Cys Glu Gln Asp Met Arg | 275 | 280 | 285 |
| Ser Gly Val Leu Gly Thr Arg Gly Arg Thr Cys Asn Lys Thr Ser | 290 | 295 | 300 |
| Lys Ala Ile Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly Phe | 305 | 310 | 315 |
| His Thr Ala Gln Val Glu Leu Ala Glu Arg Cys Ser Cys Lys Phe | 320 | 325 | 330 |
| His Trp Cys Cys Phe Val Lys Cys Arg Gln Cys Gln Arg Leu Val | 335 | 340 | 345 |
| Glu Leu His Thr Cys Arg | 350 | | |

<210> 227

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 227

gctgcagctg caaattccac tgg 23

<210> 228

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 228

tggtgggaga ctgtttaaat tatcggcc 28

<210> 229

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 229

tgcttcgtca agtgccggca gtgccagcgg ctogtggagt t 41

<210> 230

<211> 1355

<212> DNA

<213> Homo sapiens

<400> 230

cggacgcgtg ggcggacgcg tgggcggacg cgtgggcgga cgcgtgggct 50
gggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcggca 100
gctccgagga ggtccccgga gggccctggg gacgctgggt gcactggagc 150
aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200
ggctgtgatt ctgagtatcc tattgtccaa ggcctccacg gagcgcgcgg 250
cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300
gcggcgctgg gtgccctgaa ggaggaggtc ggagactgcc acagctgctg 350
ctcggggacg caggcgcagc tgcagaccac gcgcgcggag cttggggagg 400
cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgcgtgag 450
cgcgtgaccc agggcttggc tgaagccggc aggggcccgtg aggacgtccg 500
cactgagctg ttccgggcgc tggaggccgt gaggctccag aacaactcct 550
gcgagccgtg cccacgctg tggtgtcct tcgagggctc ctgctacttt 600
ttctctgtgc caaagacgac gtgggcggcg gcgcaggatc actgcgcaga 650
tgccagcgcg cacctggtga tcgttggggg cctggatgag cagggttcc 700
tcactcgga cagcgtggc cgtggttact ggctgggcct gagggtgtg 750
cgccatctgg gcaaggttca gggctaccag tgggtggacg gagtctctct 800
cagcttcagc cactggaacc agggagagcc caatgacgct tgggggcgcg 850
agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900
gacagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950
ccgcccagtg ccctggagcc gcgcccattg cagcatgtcg taccctgggg 1000
gctgctcacc tccctggctc ctggagctga ttgccaaaga gtttttttct 1050
tcctcatcca ccgctgtga gtctcagaaa cacttggtccc aacatagccc 1100
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actccactca cgcagaccca acctaacctc cactagctcc aaaatccctg 1200
 ctctgcgctc cccgtgatat gcctccactt ctctccctaa ccaagggttag 1250
 gtgactgagg actggagctg tttgggttttc tcgcattttc caccaaactg 1300
 gaagctgttt ttgcagcctg aggaagcatc aataaatatt tgagaaatga 1350
 aaaaa 1355

<210> 231

<211> 293

<212> PRT

<213> Homo sapiens

<400> 231

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Asp | Thr | Thr | Arg | Tyr | Ser | Lys | Trp | Gly | Gly | Ser | Ser | Glu | Glu | 1 | 5 | 10 | 15 |
| Val | Pro | Gly | Gly | Pro | Trp | Gly | Arg | Trp | Val | His | Trp | Ser | Arg | Arg | 20 | 25 | 30 | |
| Pro | Leu | Phe | Leu | Ala | Leu | Ala | Val | Leu | Val | Thr | Thr | Val | Leu | Trp | 35 | 40 | 45 | |
| Ala | Val | Ile | Leu | Ser | Ile | Leu | Leu | Ser | Lys | Ala | Ser | Thr | Glu | Arg | 50 | 55 | 60 | |
| Ala | Ala | Leu | Leu | Asp | Gly | His | Asp | Leu | Leu | Arg | Thr | Asn | Ala | Ser | 65 | 70 | 75 | |
| Lys | Gln | Thr | Ala | Ala | Leu | Gly | Ala | Leu | Lys | Glu | Glu | Val | Gly | Asp | 80 | 85 | 90 | |
| Cys | His | Ser | Cys | Cys | Ser | Gly | Thr | Gln | Ala | Gln | Leu | Gln | Thr | Thr | 95 | 100 | 105 | |
| Arg | Ala | Glu | Leu | Gly | Glu | Ala | Gln | Ala | Lys | Leu | Met | Glu | Gln | Glu | 110 | 115 | 120 | |
| Ser | Ala | Leu | Arg | Glu | Leu | Arg | Glu | Arg | Val | Thr | Gln | Gly | Leu | Ala | 125 | 130 | 135 | |
| Glu | Ala | Gly | Arg | Gly | Arg | Glu | Asp | Val | Arg | Thr | Glu | Leu | Phe | Arg | 140 | 145 | 150 | |
| Ala | Leu | Glu | Ala | Val | Arg | Leu | Gln | Asn | Asn | Ser | Cys | Glu | Pro | Cys | 155 | 160 | 165 | |
| Pro | Thr | Ser | Trp | Leu | Ser | Phe | Glu | Gly | Ser | Cys | Tyr | Phe | Phe | Ser | 170 | 175 | 180 | |
| Val | Pro | Lys | Thr | Thr | Trp | Ala | Ala | Ala | Gln | Asp | His | Cys | Ala | Asp | 185 | 190 | 195 | |
| Ala | Ser | Ala | His | Leu | Val | Ile | Val | Gly | Gly | Leu | Asp | Glu | Gln | Gly | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Thr | Arg | Asn | Thr | Arg | Gly | Arg | Gly | Tyr | Trp | Leu | Gly | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| | | | | | | | | | | | | | | |
| Arg | Ala | Val | Arg | His | Leu | Gly | Lys | Val | Gln | Gly | Tyr | Gln | Trp | Val |
| | | | | 230 | | | | | 235 | | | | | 240 |
| | | | | | | | | | | | | | | |
| Asp | Gly | Val | Ser | Leu | Ser | Phe | Ser | His | Trp | Asn | Gln | Gly | Glu | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| | | | | | | | | | | | | | | |
| Asn | Asp | Ala | Trp | Gly | Arg | Glu | Asn | Cys | Val | Met | Met | Leu | His | Thr |
| | | | | 260 | | | | | 265 | | | | | 270 |
| | | | | | | | | | | | | | | |
| Gly | Leu | Trp | Asn | Asp | Ala | Pro | Cys | Asp | Ser | Glu | Lys | Asp | Gly | Trp |
| | | | | 275 | | | | | 280 | | | | | 285 |
| | | | | | | | | | | | | | | |
| Ile | Cys | Glu | Lys | Arg | His | Asn | Cys | | | | | | | |
| | | | | 290 | | | | | | | | | | |

<210> 232
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 232
 gcgagaactg tgtcatgatg ctgc 24

<210> 233
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 233
 gtttctgaga ctcagcagcg gtgg 24

<210> 234
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 234
 caccgtgtga cagcgagaag gacggctgga tctgtgagaa aaggcacaac 50

<210> 235
 <211> 1847
 <212> DNA
 <213> Homo sapiens

<400> 235

gccaggggaa gaggggtgatc cgacccgggg aaggtcgctg ggcagggcga 50
gttgggaaag cggcagcccc cgccgcccc gcagcccctt ctctccttt 100
ctcccacgtc ctatctgcct ctcgctggag gccaggccgt gcagcatcga 150
agacaggagg aactggagcc tcattggccg gcccgggcg ccggcctcgg 200
gcttaaatag gagctccggg ctctggctgg gacccgaccg ctgccggccg 250
cgctcccgt gctcctgccg ggtgatggaa aacccagcc cggccgccgc 300
cctgggcaag gccctctgcg ctctcctcct ggccactctc ggccgcgcg 350
gccagcctct tgggggagag tccatctgtt ccgccagagc cccggccaaa 400
tacagcatca ccttcacggg caagtggagc cagacggcct tccccaaagca 450
gtaccccctg ttccgcccc ctgcgcagtg gtcttcgctg ctgggggccc 500
cgcatagctc cgactacagc atgtggagga agaaccagta cgtcagtaac 550
gggctgcgcg actttgcgga gcgcggcgag gcctgggcgc tgatgaagga 600
gatcgaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650
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cagcgcaggc actcgttgt ctcgtttggt gtgcgcatcg tgcccagccc 750
cgactggttc gtgggcgtgg acagcctgga cctgtgcgac ggggaccgtt 800
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cggagccatg ggggtgcggg ggctcctgtg caggctcatg ctgcaggcgg 1350
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 cagctactct aaattatgtc tccttataag ttattgctgc tccaggagat 1600
 tgtccttcat cgtccagggg cctggctccc acgtggttgc agatacctca 1650
 gacctggtgc tctaggctgt gctgagccca ctctcccag ggcgcatcca 1700
 agcggggggc acttgagaag tgaataaatg gggcggtttc ggaagcgtca 1750
 gtgtttccat gttatggatc tctctgcgtt tgaataaaga ctatctctgt 1800
 tgctcacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1847

<210> 236

<211> 331

<212> PRT

<213> Homo sapiens

<400> 236

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Pro | Ser | Pro | Ala | Ala | Ala | Leu | Gly | Lys | Ala | Leu | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Leu | Leu | Leu | Ala | Thr | Leu | Gly | Ala | Ala | Gly | Gln | Pro | Leu | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Glu | Ser | Ile | Cys | Ser | Ala | Arg | Ala | Pro | Ala | Lys | Tyr | Ser | Ile |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Phe | Thr | Gly | Lys | Trp | Ser | Gln | Thr | Ala | Phe | Pro | Lys | Gln | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Leu | Phe | Arg | Pro | Pro | Ala | Gln | Trp | Ser | Ser | Leu | Leu | Gly | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | His | Ser | Ser | Asp | Tyr | Ser | Met | Trp | Arg | Lys | Asn | Gln | Tyr | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Asn | Gly | Leu | Arg | Asp | Phe | Ala | Glu | Arg | Gly | Glu | Ala | Trp | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Met | Lys | Glu | Ile | Glu | Ala | Ala | Gly | Glu | Ala | Leu | Gln | Ser | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| His | Glu | Val | Phe | Ser | Ala | Pro | Ala | Val | Pro | Ser | Gly | Thr | Gly | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Ser | Ala | Glu | Leu | Glu | Val | Gln | Arg | Arg | His | Ser | Leu | Val | Ser |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Val | Val | Arg | Ile | Val | Pro | Ser | Pro | Asp | Trp | Phe | Val | Gly | Val |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asp Ser Leu Asp | Leu Cys Asp Gly Asp | Arg Trp Arg Glu Gln Ala | 170 | 175 | 180 |
| Ala Leu Asp Leu | Tyr Pro Tyr Asp Ala | Gly Thr Asp Ser Gly Phe | 185 | 190 | 195 |
| Thr Phe Ser Ser | Pro Asn Phe Ala Thr | Ile Pro Gln Asp Thr Val | 200 | 205 | 210 |
| Thr Glu Ile Thr | Ser Ser Ser Pro Ser | His Pro Ala Asn Ser Phe | 215 | 220 | 225 |
| Tyr Tyr Pro Arg | Leu Lys Ala Leu Pro | Pro Ile Ala Arg Val Thr | 230 | 235 | 240 |
| Leu Leu Arg Leu | Arg Gln Ser Pro Arg | Ala Phe Ile Pro Pro Ala | 245 | 250 | 255 |
| Pro Val Leu Pro | Ser Arg Asp Asn Glu | Ile Val Asp Ser Ala Ser | 260 | 265 | 270 |
| Val Pro Glu Thr | Pro Leu Asp Cys Glu | Val Ser Leu Trp Ser Ser | 275 | 280 | 285 |
| Trp Gly Leu Cys | Gly Gly His Cys Gly | Arg Leu Gly Thr Lys Ser | 290 | 295 | 300 |
| Arg Thr Arg Tyr | Val Arg Val Gln Pro | Ala Asn Asn Gly Ser Pro | 305 | 310 | 315 |
| Cys Pro Glu Leu | Glu Glu Glu Ala Glu | Cys Val Pro Asp Asn Cys | 320 | 325 | 330 |

Val

<210> 237

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 237

cagcactgcc aggggaagag gg 22

<210> 238

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 238

caggactcgc tacgtccg 18

<210> 239
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 239
cagccccttc tcctcctttc tccc 24

<210> 240
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 240
gcagttatca gggacgcact cagcc 25

<210> 241
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 241
ccagcgagag gcagatag 18

<210> 242
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 242
cggtcaccgt gtcctgcggg atg 23

<210> 243
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 243
cagccccttc tcctcctttc tcccacgtcc tatctgcctc tc 42

<210> 244

<211> 1894
<212> DNA
<213> Homo sapiens

<400> 244
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aggaagagtg tactcgtagg cggacagctt tagtggccgg ccggccgctc 150
tcatcccccg taaggagcag agtcctttgt actgaccaag atgagcaaca 200
tctacatcca ggagcctccc acgaatggga aggtttttatt gaaaactaca 250
gctggagata ttgacataga gttgtggtcc aaagaagctc ctaaagcttg 300
cagaaatfff atccaactff gtttggaagc ttattatgac aataccatff 350
ttcatagagt tgtgcctggt ttcatagtcc aaggcggaga tcctactggc 400
acagggagtg gtggagagtc tatctatgga gcgccattca aagatgaatt 450
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ctggtttctca tgataatggc agccagtttt tcttcacact gggtcgagca 550
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tactttcatt tggagaggaa gctgaggaag aagaggagga agtaaatcga 850
gttagtcaga gcatgaaggg caaaaagcaaa agtagtcatg acttgcttaa 900
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atgcaccaga tttagttgat gatggagaag atgaaagtgc agagcatgat 1000
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 ctgaaaatga cattcctgaa acagaagtag aagatgatga aggatggatg 1450
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 ataaaagaag gaggggaagaa agcaaaaagc tgatgagaga gaaaaaagaa 1600
 agaagataaa atgagaataa tgataaccag aacttgctgg aaatgtgcct 1650
 acaatggcct tgtaacagcc attgttccca acagcatcac ttaggggtgt 1700
 gaaaagaagt atttttgaac ctgttgtctg gttttgaaaa acaattatct 1750
 tgttttgcaa attgtggaat gatgtaagca aatgcttttg gttactggta 1800
 catgtgtttt ttcctagctg accttttata ttgctaaatc tgaaataaaa 1850
 taactttcct tccacaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1894

<210> 245
 <211> 472
 <212> PRT
 <213> Homo sapiens

<400> 245
 Met Ser Asn Ile Tyr Ile Gln Glu Pro Pro Thr Asn Gly Lys Val
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 Leu Leu Lys Thr Thr Ala Gly Asp Ile Asp Ile Glu Leu Trp Ser
 20 25 30
 Lys Glu Ala Pro Lys Ala Cys Arg Asn Phe Ile Gln Leu Cys Leu
 35 40 45
 Glu Ala Tyr Tyr Asp Asn Thr Ile Phe His Arg Val Val Pro Gly
 50 55 60
 Phe Ile Val Gln Gly Gly Asp Pro Thr Gly Thr Gly Ser Gly Gly
 65 70 75
 Glu Ser Ile Tyr Gly Ala Pro Phe Lys Asp Glu Phe His Ser Arg
 80 85 90
 Leu Arg Phe Asn Arg Arg Gly Leu Val Ala Met Ala Asn Ala Gly
 95 100 105
 Ser His Asp Asn Gly Ser Gln Phe Phe Phe Thr Leu Gly Arg Ala
 110 115 120
 Asp Glu Leu Asn Asn Lys His Thr Ile Phe Gly Lys Val Thr Gly
 125 130 135

| | | | |
|-----------------|---------------------|---------------------|-----|
| Asp Thr Val Tyr | Asn Met Leu Arg Leu | Ser Glu Val Asp Ile | Asp |
| 140 | | 145 | 150 |
| Asp Asp Glu Arg | Pro His Asn Pro His | Lys Ile Lys Ser Cys | Glu |
| 155 | | 160 | 165 |
| Val Leu Phe Asn | Pro Phe Asp Asp Ile | Ile Pro Arg Glu Ile | Lys |
| 170 | | 175 | 180 |
| Arg Leu Lys Lys | Glu Lys Pro Glu Glu | Glu Val Lys Lys Leu | Lys |
| 185 | | 190 | 195 |
| Pro Lys Gly Thr | Lys Asn Phe Ser Leu | Leu Ser Phe Gly Glu | Glu |
| 200 | | 205 | 210 |
| Ala Glu Glu Glu | Glu Glu Glu Val Asn | Arg Val Ser Gln Ser | Met |
| 215 | | 220 | 225 |
| Lys Gly Lys Ser | Lys Ser Ser His Asp | Leu Leu Lys Asp Asp | Pro |
| 230 | | 235 | 240 |
| His Leu Ser Ser | Val Pro Val Val Glu | Ser Glu Lys Gly Asp | Ala |
| 245 | | 250 | 255 |
| Pro Asp Leu Val | Asp Asp Gly Glu Asp | Glu Ser Ala Glu His | Asp |
| 260 | | 265 | 270 |
| Glu Tyr Ile Asp | Gly Asp Glu Lys Asn | Leu Met Arg Glu Arg | Ile |
| 275 | | 280 | 285 |
| Ala Lys Lys Leu | Lys Lys Asp Thr Ser | Ala Asn Val Lys Ser | Ala |
| 290 | | 295 | 300 |
| Gly Glu Gly Glu | Val Glu Lys Lys Ser | Val Ser Arg Ser Glu | Glu |
| 305 | | 310 | 315 |
| Leu Arg Lys Glu | Ala Arg Gln Leu Lys | Arg Glu Leu Leu Ala | Ala |
| 320 | | 325 | 330 |
| Lys Gln Lys Lys | Val Glu Asn Ala Ala | Lys Gln Ala Glu Lys | Arg |
| 335 | | 340 | 345 |
| Ser Glu Glu Glu | Glu Ala Pro Pro Asp | Gly Ala Val Ala Glu | Tyr |
| 350 | | 355 | 360 |
| Arg Arg Glu Lys | Gln Lys Tyr Glu Ala | Leu Arg Lys Gln Gln | Ser |
| 365 | | 370 | 375 |
| Lys Lys Gly Thr | Ser Arg Glu Asp Gln | Thr Leu Ala Leu Leu | Asn |
| 380 | | 385 | 390 |
| Gln Phe Lys Ser | Lys Leu Thr Gln Ala | Ile Ala Glu Thr Pro | Glu |
| 395 | | 400 | 405 |
| Asn Asp Ile Pro | Glu Thr Glu Val Glu | Asp Asp Glu Gly Trp | Met |
| 410 | | 415 | 420 |

Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp
425 430 435

Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg
440 445 450

Asn Pro Val Asn Lys Arg Arg Arg Glu Glu Ser Lys Lys Leu Met
455 460 465

Arg Glu Lys Lys Glu Arg Arg
470

<210> 246

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<211> 545

<212> PRT

<213> Homo sapiens

<400> 254

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Thr | Gly | Phe | Ser | Phe | Gly | Ser | Gly | Thr | Leu | Gly | Ser | Thr | 1 | 5 | 10 | 15 |
| Thr | Val | Ala | Ala | Gly | Gly | Thr | Ser | Thr | Gly | Gly | Val | Phe | Ser | Phe | 20 | 25 | 30 | |
| Gly | Thr | Gly | Thr | Ser | Ser | Asn | Pro | Ser | Val | Gly | Leu | Asn | Phe | Gly | 35 | 40 | 45 | |
| Asn | Leu | Gly | Ser | Thr | Ser | Thr | Pro | Ala | Thr | Thr | Ser | Ala | Pro | Ser | 50 | 55 | 60 | |
| Ser | Gly | Phe | Gly | Thr | Gly | Leu | Phe | Gly | Ser | Lys | Pro | Ala | Thr | Gly | 65 | 70 | 75 | |
| Phe | Thr | Leu | Gly | Gly | Thr | Asn | Thr | Gly | Ala | Leu | His | Thr | Lys | Arg | 80 | 85 | 90 | |
| Pro | Gln | Val | Val | Thr | Lys | Tyr | Gly | Thr | Leu | Gln | Gly | Lys | Gln | Met | 95 | 100 | 105 | |
| His | Val | Gly | Lys | Thr | Pro | Ile | Gln | Val | Phe | Leu | Gly | Val | Pro | Phe | 110 | 115 | 120 | |
| Ser | Arg | Pro | Pro | Leu | Gly | Ile | Leu | Arg | Phe | Ala | Pro | Pro | Glu | Pro | 125 | 130 | 135 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Pro | Glu | Pro | Trp | Lys | Gly | Ile | Arg | Asp | Ala | Thr | Thr | Tyr | Pro | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Trp | Ser | Leu | Ala | Leu | Ser | Pro | Gly | Trp | Ser | Ala | Val | Ala | Arg | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ser | Arg | Leu | Thr | Ala | Thr | Ser | Ala | Ser | Arg | Val | Gln | Ala | Ser | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Pro | Gln | Pro | Leu | Ser | Val | Trp | Gly | Tyr | Arg | Cys | Leu | Gln | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Trp | Gly | Gln | Leu | Ala | Ser | Met | Tyr | Val | Ser | Thr | Arg | Glu | Arg | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Tyr | Lys | Trp | Leu | Arg | Phe | Ser | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Val | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Tyr | Ala | Pro | Ala | Arg | Ala | Pro | Gly | Asp | Pro | Gln | Leu | Pro | Val | Met | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Trp | Phe | Pro | Gly | Gly | Ala | Phe | Ile | Val | Gly | Ala | Ala | Ser | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Tyr | Glu | Gly | Ser | Asp | Leu | Ala | Ala | Arg | Glu | Lys | Val | Val | Leu | Val | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Phe | Leu | Gln | His | Arg | Leu | Gly | Ile | Phe | Gly | Phe | Leu | Ser | Thr | Asp | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asp | Ser | His | Ala | Arg | Gly | Asn | Trp | Gly | Leu | Leu | Asp | Gln | Met | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ala | Leu | Arg | Trp | Val | Gln | Glu | Asn | Ile | Ala | Ala | Phe | Gly | Gly | Asp | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Pro | Gly | Asn | Val | Thr | Leu | Phe | Gly | Gln | Ser | Ala | Gly | Ala | Met | Ser | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Ile | Ser | Gly | Leu | Met | Met | Ser | Pro | Leu | Ala | Ser | Gly | Leu | Phe | His | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Arg | Ala | Ile | Ser | Gln | Ser | Gly | Thr | Ala | Leu | Phe | Arg | Leu | Phe | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Thr | Ser | Asn | Pro | Leu | Lys | Val | Ala | Lys | Lys | Val | Ala | His | Leu | Ala | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gly | Cys | Asn | His | Asn | Ser | Thr | Gln | Ile | Leu | Val | Asn | Cys | Leu | Arg | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ala | Leu | Ser | Gly | Thr | Lys | Val | Met | Arg | Val | Ser | Asn | Lys | Met | Arg | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Phe | Leu | Gln | Leu | Asn | Phe | Gln | Arg | Asp | Pro | Glu | Glu | Ile | Ile | Trp | |
| | | | | 410 | | | | | 415 | | | | | 420 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Met | Ser | Pro | Val | Val | Asp | Gly | Val | Val | Ile | Pro | Asp | Asp | Pro | 425 | 430 | 435 |
| Leu | Val | Leu | Leu | Thr | Gln | Gly | Lys | Val | Ser | Ser | Val | Pro | Tyr | Leu | 440 | 445 | 450 |
| Leu | Gly | Val | Asn | Asn | Leu | Glu | Phe | Asn | Trp | Leu | Leu | Pro | Tyr | Asn | 455 | 460 | 465 |
| Ile | Thr | Lys | Glu | Gln | Val | Pro | Leu | Val | Val | Glu | Glu | Tyr | Leu | Asp | 470 | 475 | 480 |
| Asn | Val | Asn | Glu | His | Asp | Trp | Lys | Met | Leu | Arg | Asn | Arg | Met | Met | 485 | 490 | 495 |
| Asp | Ile | Val | Gln | Asp | Ala | Thr | Phe | Val | Tyr | Ala | Thr | Leu | Gln | Thr | 500 | 505 | 510 |
| Ala | His | Tyr | His | Arg | Glu | Thr | Pro | Met | Met | Gly | Ile | Cys | Pro | Ala | 515 | 520 | 525 |
| Gly | His | Ala | Thr | Thr | Arg | Met | Lys | Ser | Thr | Cys | Ser | Trp | Ile | Leu | 530 | 535 | 540 |
| Pro | Gln | Glu | Trp | Ala | | | | | | | | | | | 545 | | |

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<210> 256
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<400> 256
 ccacctcagg aagccgaaga tgcc 24

<210> 257
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 <213> Artificial Sequence

<220>
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<400> 257

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<210> 258

<211> 2764

<212> DNA

<213> Homo sapiens

<400> 258

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actgccactg ctgctgtcct cgctgctggg cgggtcccag gctatggatg 100

ggagattctg gatacgagtg caggagtcag tgatggtgcc ggagggcctg 150

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gtctacccca gcttatggct actggttcaa agcagtgact gagacaacca 250

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cttggtgatc agagacgcgc agatgcagga tgagtcacag tacttctttc 400

gggtggagag aggaagctat gtgacatata atttcatgaa cgatgggttc 450

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 <211> 544
 <212> PRT
 <213> Homo sapiens

<400> 259

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| Met | Leu | Leu | Pro | Leu | Leu | Leu | Ser | Ser | Leu | Leu | Gly | Gly | Ser | Gln | 1 | 5 | 10 | 15 |
| Ala | Met | Asp | Gly | Arg | Phe | Trp | Ile | Arg | Val | Gln | Glu | Ser | Val | Met | 20 | 25 | 30 | |
| Val | Pro | Glu | Gly | Leu | Cys | Ile | Ser | Val | Pro | Cys | Ser | Phe | Ser | Tyr | 35 | 40 | 45 | |
| Pro | Arg | Gln | Asp | Trp | Thr | Gly | Ser | Thr | Pro | Ala | Tyr | Gly | Tyr | Trp | 50 | 55 | 60 | |
| Phe | Lys | Ala | Val | Thr | Glu | Thr | Thr | Lys | Gly | Ala | Pro | Val | Ala | Thr | 65 | 70 | 75 | |
| Asn | His | Gln | Ser | Arg | Glu | Val | Glu | Met | Ser | Thr | Arg | Gly | Arg | Phe | 80 | 85 | 90 | |
| Gln | Leu | Thr | Gly | Asp | Pro | Ala | Lys | Gly | Asn | Cys | Ser | Leu | Val | Ile | 95 | 100 | 105 | |
| Arg | Asp | Ala | Gln | Met | Gln | Asp | Glu | Ser | Gln | Tyr | Phe | Phe | Arg | Val | 110 | 115 | 120 | |
| Glu | Arg | Gly | Ser | Tyr | Val | Thr | Tyr | Asn | Phe | Met | Asn | Asp | Gly | Phe | 125 | 130 | 135 | |
| Phe | Leu | Lys | Val | Thr | Val | Leu | Ser | Phe | Thr | Pro | Arg | Pro | Gln | Asp | 140 | 145 | 150 | |
| His | Asn | Thr | Asp | Leu | Thr | Cys | His | Val | Asp | Phe | Ser | Arg | Lys | Gly | 155 | 160 | 165 | |
| Val | Ser | Ala | Gln | Arg | Thr | Val | Arg | Leu | Arg | Val | Ala | Tyr | Ala | Pro | 170 | 175 | 180 | |
| Arg | Asp | Leu | Val | Ile | Ser | Ile | Ser | Arg | Asp | Asn | Thr | Pro | Ala | Leu | 185 | 190 | 195 | |
| Glu | Pro | Gln | Pro | Gln | Gly | Asn | Val | Pro | Tyr | Leu | Glu | Ala | Gln | Lys | 200 | 205 | 210 | |
| Gly | Gln | Phe | Leu | Arg | Leu | Leu | Cys | Ala | Ala | Asp | Ser | Gln | Pro | Pro | 215 | 220 | 225 | |

| | | | |
|---|-----|-----|-----|
| Ala Thr Leu Ser Trp Val Leu Gln Asn Arg Val Leu Ser Ser Ser | 230 | 235 | 240 |
| His Pro Trp Gly Pro Arg Pro Leu Gly Leu Glu Leu Pro Gly Val | 245 | 250 | 255 |
| Lys Ala Gly Asp Ser Gly Arg Tyr Thr Cys Arg Ala Glu Asn Arg | 260 | 265 | 270 |
| Leu Gly Ser Gln Gln Arg Ala Leu Asp Leu Ser Val Gln Tyr Pro | 275 | 280 | 285 |
| Pro Glu Asn Leu Arg Val Met Val Ser Gln Ala Asn Arg Thr Val | 290 | 295 | 300 |
| Leu Glu Asn Leu Gly Asn Gly Thr Ser Leu Pro Val Leu Glu Gly | 305 | 310 | 315 |
| Gln Ser Leu Cys Leu Val Cys Val Thr His Ser Ser Pro Pro Ala | 320 | 325 | 330 |
| Arg Leu Ser Trp Thr Gln Arg Gly Gln Val Leu Ser Pro Ser Gln | 335 | 340 | 345 |
| Pro Ser Asp Pro Gly Val Leu Glu Leu Pro Arg Val Gln Val Glu | 350 | 355 | 360 |
| His Glu Gly Glu Phe Thr Cys His Ala Arg His Pro Leu Gly Ser | 365 | 370 | 375 |
| Gln His Val Ser Leu Ser Leu Ser Val His Tyr Lys Lys Gly Leu | 380 | 385 | 390 |
| Ile Ser Thr Ala Phe Ser Asn Gly Ala Phe Leu Gly Ile Gly Ile | 395 | 400 | 405 |
| Thr Ala Leu Leu Phe Leu Cys Leu Ala Leu Ile Ile Met Lys Ile | 410 | 415 | 420 |
| Leu Pro Lys Arg Arg Thr Gln Thr Glu Thr Pro Arg Pro Arg Phe | 425 | 430 | 435 |
| Ser Arg His Ser Thr Ile Leu Asp Tyr Ile Asn Val Val Pro Thr | 440 | 445 | 450 |
| Ala Gly Pro Leu Ala Gln Lys Arg Asn Gln Lys Ala Thr Pro Asn | 455 | 460 | 465 |
| Ser Pro Arg Thr Pro Pro Pro Pro Gly Ala Pro Ser Pro Glu Ser | 470 | 475 | 480 |
| Lys Lys Asn Gln Lys Lys Gln Tyr Gln Leu Pro Ser Phe Pro Glu | 485 | 490 | 495 |
| Pro Lys Ser Ser Thr Gln Ala Pro Glu Ser Gln Glu Ser Gln Glu | 500 | 505 | 510 |

Glu Leu His Tyr Ala Thr Leu Asn Phe Pro Gly Val Arg Pro Arg
515 520 525

Pro Glu Ala Arg Met Pro Lys Gly Thr Gln Ala Asp Tyr Ala Glu
530 535 540

Val Lys Phe Gln

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<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 260

caaagcctgc gcctgggtctg tg 22

<210> 261

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 261

ttctggagcc cagaggggtgc tgag 24

<210> 262

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 262

ggagctgccca cccattcaaa tggagcacga aggagagttc acctg 45

<210> 263

<211> 2857

<212> DNA

<213> Homo sapiens

<400> 263

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actgctgcgt tttatgttgg gaattcctct cctatggcct tgtcttggag 100

caacagaaaa ctctcaaaca aagaaagtca agcagccagt gcgatctcat 150

ttgagagtga agcgtggctg ggtgtggaac caattttttg taccagagga 200

aatgaatacg actagtcatc acatcggcca gctaagatct gatttagaca 250
atggaaacaa ttctttccag tacaagcttt tgggagctgg agctggaagt 300
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cattgtacca gagatgtctc cagaaggaac attagttatc caggtgacag 550
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agcttacttc aaggccagcc atatttttct gttgaaccaa caacaggagt 650
cataagaata tcttctaaaa tggatagaga actgcaagat gagtattggg 700
taatcattca agccaaggac atgattggtc agccaggagc gttgtctgga 750
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ggacttctat aggaacaatc atggcatatg ataatgacat aggagagaat 900
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tattactaat catgaaactc aagaaggaat agttatatta aaaaagaaag 1000
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tagataatca agataacaca gctgtcattt tgactaatag aactggtttt 1650

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<210> 264

<211> 772

<212> PRT

<213> Homo sapiens

<400> 264

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|----|-----|
| Met | Asn | Cys | Tyr | Leu | Leu | Leu | Arg | Phe | Met | Leu | Gly | Ile | Pro | Leu | | 1 | 5 | 10 | 15 |
| Leu | Trp | Pro | Cys | Leu | Gly | Ala | Thr | Glu | Asn | Ser | Gln | Thr | Lys | Lys | | 20 | 25 | | 30 |
| Val | Lys | Gln | Pro | Val | Arg | Ser | His | Leu | Arg | Val | Lys | Arg | Gly | Trp | | 35 | 40 | | 45 |
| Val | Trp | Asn | Gln | Phe | Phe | Val | Pro | Glu | Glu | Met | Asn | Thr | Thr | Ser | | 50 | 55 | | 60 |
| His | His | Ile | Gly | Gln | Leu | Arg | Ser | Asp | Leu | Asp | Asn | Gly | Asn | Asn | | 65 | 70 | | 75 |
| Ser | Phe | Gln | Tyr | Lys | Leu | Leu | Gly | Ala | Gly | Ala | Gly | Ser | Thr | Phe | | 80 | 85 | | 90 |
| Ile | Ile | Asp | Glu | Arg | Thr | Gly | Asp | Ile | Tyr | Ala | Ile | Gln | Lys | Leu | | 95 | 100 | | 105 |
| Asp | Arg | Glu | Glu | Arg | Ser | Leu | Tyr | Ile | Leu | Arg | Ala | Gln | Val | Ile | | 110 | 115 | | 120 |
| Asp | Ile | Ala | Thr | Gly | Arg | Ala | Val | Glu | Pro | Glu | Ser | Glu | Phe | Val | | 125 | 130 | | 135 |
| Ile | Lys | Val | Ser | Asp | Ile | Asn | Asp | Asn | Glu | Pro | Lys | Phe | Leu | Asp | | 140 | 145 | | 150 |
| Glu | Pro | Tyr | Glu | Ala | Ile | Val | Pro | Glu | Met | Ser | Pro | Glu | Gly | Thr | | 155 | 160 | | 165 |
| Leu | Val | Ile | Gln | Val | Thr | Ala | Ser | Asp | Ala | Asp | Asp | Pro | Ser | Ser | | 170 | 175 | | 180 |
| Gly | Asn | Asn | Ala | Arg | Leu | Leu | Tyr | Ser | Leu | Leu | Gln | Gly | Gln | Pro | | 185 | 190 | | 195 |
| Tyr | Phe | Ser | Val | Glu | Pro | Thr | Thr | Gly | Val | Ile | Arg | Ile | Ser | Ser | | 200 | 205 | | 210 |
| Lys | Met | Asp | Arg | Glu | Leu | Gln | Asp | Glu | Tyr | Trp | Val | Ile | Ile | Gln | | 215 | 220 | | 225 |
| Ala | Lys | Asp | Met | Ile | Gly | Gln | Pro | Gly | Ala | Leu | Ser | Gly | Thr | Thr | | 230 | 235 | | 240 |
| Ser | Val | Leu | Ile | Lys | Leu | Ser | Asp | Val | Asn | Asp | Asn | Lys | Pro | Ile | | 245 | 250 | | 255 |
| Phe | Lys | Glu | Ser | Leu | Tyr | Arg | Leu | Thr | Val | Ser | Glu | Ser | Ala | Pro | | 260 | 265 | | 270 |
| Thr | Gly | Thr | Ser | Ile | Gly | Thr | Ile | Met | Ala | Tyr | Asp | Asn | Asp | Ile | | 275 | 280 | | 285 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Gly Glu Asn Ala | Glu Met Asp Tyr Ser | Ile Glu Glu Asp Asp Ser | 290 | 295 | 300 |
| Gln Thr Phe Asp | Ile Ile Thr Asn His | Glu Thr Gln Glu Gly Ile | 305 | 310 | 315 |
| Val Ile Leu Lys | Lys Lys Val Asp Phe | Glu His Gln Asn His Tyr | 320 | 325 | 330 |
| Gly Ile Arg Ala | Lys Val Lys Asn His | His Val Pro Glu Gln Leu | 335 | 340 | 345 |
| Met Lys Tyr His | Thr Glu Ala Ser Thr | Thr Phe Ile Lys Ile Gln | 350 | 355 | 360 |
| Val Glu Asp Val | Asp Glu Pro Pro Leu | Phe Leu Leu Pro Tyr Tyr | 365 | 370 | 375 |
| Val Phe Glu Val | Phe Glu Glu Thr Pro | Gln Gly Ser Phe Val Gly | 380 | 385 | 390 |
| Val Val Ser Ala | Thr Asp Pro Asp Asn | Arg Lys Ser Pro Ile Arg | 395 | 400 | 405 |
| Tyr Ser Ile Thr | Arg Ser Lys Val Phe | Asn Ile Asn Asp Asn Gly | 410 | 415 | 420 |
| Thr Ile Thr Thr | Ser Asn Ser Leu Asp | Arg Glu Ile Ser Ala Trp | 425 | 430 | 435 |
| Tyr Asn Leu Ser | Ile Thr Ala Thr Glu | Lys Tyr Asn Ile Glu Gln | 440 | 445 | 450 |
| Ile Ser Ser Ile | Pro Leu Tyr Val Gln | Val Leu Asn Ile Asn Asp | 455 | 460 | 465 |
| His Ala Pro Glu | Phe Ser Gln Tyr Tyr | Glu Thr Tyr Val Cys Glu | 470 | 475 | 480 |
| Asn Ala Gly Ser | Gly Gln Val Ile Gln | Thr Ile Ser Ala Val Asp | 485 | 490 | 495 |
| Arg Asp Glu Ser | Ile Glu Glu His His | Phe Tyr Phe Asn Leu Ser | 500 | 505 | 510 |
| Val Glu Asp Thr | Asn Asn Ser Ser Phe | Thr Ile Ile Asp Asn Gln | 515 | 520 | 525 |
| Asp Asn Thr Ala | Val Ile Leu Thr Asn | Arg Thr Gly Phe Asn Leu | 530 | 535 | 540 |
| Gln Glu Glu Pro | Val Phe Tyr Ile Ser | Ile Leu Ile Ala Asp Asn | 545 | 550 | 555 |
| Gly Ile Pro Ser | Leu Thr Ser Thr Asn | Thr Leu Thr Ile His Val | 560 | 565 | 570 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Cys | Asp | Cys | Gly | Asp | Ser | Gly | Ser | Thr | Gln | Thr | Cys | Gln | Tyr | Gln | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Glu | Leu | Val | Leu | Ser | Met | Gly | Phe | Lys | Thr | Glu | Val | Ile | Ile | Ala | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Ile | Leu | Ile | Cys | Ile | Met | Ile | Ile | Phe | Gly | Phe | Ile | Phe | Leu | Thr | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Leu | Gly | Leu | Lys | Gln | Arg | Arg | Lys | Gln | Ile | Leu | Phe | Pro | Glu | Lys | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ser | Glu | Asp | Phe | Arg | Glu | Asn | Ile | Phe | Gln | Tyr | Asp | Asp | Glu | Gly | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Gly | Gly | Glu | Glu | Asp | Thr | Glu | Ala | Phe | Asp | Ile | Ala | Glu | Leu | Arg | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Ser | Ser | Thr | Ile | Met | Arg | Glu | Arg | Lys | Thr | Arg | Lys | Thr | Thr | Ser | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Ala | Glu | Ile | Arg | Ser | Leu | Tyr | Arg | Gln | Ser | Leu | Gln | Val | Gly | Pro | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Asp | Ser | Ala | Ile | Phe | Arg | Lys | Phe | Ile | Leu | Glu | Lys | Leu | Glu | Glu | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Ala | Asn | Thr | Asp | Pro | Cys | Ala | Pro | Pro | Phe | Asp | Ser | Leu | Gln | Thr | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Tyr | Ala | Phe | Glu | Gly | Thr | Gly | Ser | Leu | Ala | Gly | Ser | Leu | Ser | Ser | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Glu | Ser | Ala | Val | Ser | Asp | Gln | Asp | Glu | Ser | Tyr | Asp | Tyr | Leu | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Asn | Glu | Leu | Gly | Pro | Arg | Phe | Lys | Arg | Leu | Ala | Cys | Met | Phe | Gly | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Ser | Ala | Val | Gln | Ser | Asn | Asn | | | | | | | | | |
| | | | | 770 | | | | | | | | | | | |

<210> 265

<211> 349

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 24, 60, 141, 226, 228, 249, 252

<223> unknown base

<400> 265

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attcaagcca aggacatgat tggtcagcca ggagcgttgt ntggaacaac 150
aagtgtatta attaaacttt cagatgttaa tgacaataag cctatatatta 200
aagaaagttt ataccgcttg actgtntntg aatctgcacc cactgggant 250
tntataggaa caatcatggc atatgataat gacataggag agaatgcaga 300
aatggattac agcattgaag aggatgattc gcaaacattt gacattatt 349

<210> 266

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 266

cttgactgtc tctgaatctg cacc 25

<210> 267

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 267

aagtgggtgga agcctccagt gtgg 24

<210> 268

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 268

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gc 52

<210> 269

<211> 2747

<212> DNA

<213> Homo sapiens

<400> 269

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cccgccttaa cttcctccgc ggggccccagc caccttcggg agtccggggtt 150

gcccacctgc aaactctccg ctttctgcac ctgccacccc tgagccagcg 200
cgggcccccg agcgagtcac ggccaacgcg gggctgcagc tgttgggctt 250
cattctcgcc ttcctgggat ggatcggcgc catcgtcagc actgccctgc 300
cccagtggag gatttactcc tatgccggcg acaacatcgt gaccgccag 350
gccatgtacg aggggctgtg gatgtcctgc gtgtcgcaga gcaccgggca 400
gatccagtgc aaagtctttg actccttgcg gaatctgagc agcacattgc 450
aagcaaccgc tgccttgatg gtggttgga tcctcctggg agtgatagca 500
atctttgtgg ccaccgttg catgaagtgt atgaagtgc tggaagacga 550
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gttcaagaat tctatgaccc tatgacccca gtcaatgcca ggtacgaatt 700
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acattgagat actatcatta acattaggac cttagaattt tgggtattgt 950
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tgtaagcaag tcaacttaac tttctacctc ttttttctat ctgccaaatt 2000
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tatttgc tca gctggctgag aactgaaga agtcactgaa caaacctac 2150
acacgtacct tcatgtgatt cactgccttc ctctctctac cagtctattt 2200
ccactgaaca aaacctacac acataccttc atgtggttca gtgccttcct 2250
ctctctacca gtctatttcc actgaacaaa acctaogcac ataccttcat 2300
gtggctcagt gccttcctct ctctaccagt ctatttccat tctttcagct 2350
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tccagtctgt acagaatgct atttcacttg agcaagatga tgtaatggaa 2450
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<210> 270

<211> 211

<212> PRT

<213> Homo sapiens

<400> 270

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asn | Ala | Gly | Leu | Gln | Leu | Leu | Gly | Phe | Ile | Leu | Ala | Phe |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

Leu Gly Trp Ile Gly Ala Ile Val Ser Thr Ala Leu Pro Gln Trp

| | 20 | 25 | 30 |
|---|-----|-----|-----|
| Arg Ile Tyr Ser Tyr Ala Gly Asp Asn Ile Val Thr Ala Gln Ala | 35 | 40 | 45 |
| Met Tyr Glu Gly Leu Trp Met Ser Cys Val Ser Gln Ser Thr Gly | 50 | 55 | 60 |
| Gln Ile Gln Cys Lys Val Phe Asp Ser Leu Leu Asn Leu Ser Ser | 65 | 70 | 75 |
| Thr Leu Gln Ala Thr Arg Ala Leu Met Val Val Gly Ile Leu Leu | 80 | 85 | 90 |
| Gly Val Ile Ala Ile Phe Val Ala Thr Val Gly Met Lys Cys Met | 95 | 100 | 105 |
| Lys Cys Leu Glu Asp Asp Glu Val Gln Lys Met Arg Met Ala Val | 110 | 115 | 120 |
| Ile Gly Gly Ala Ile Phe Leu Leu Ala Gly Leu Ala Ile Leu Val | 125 | 130 | 135 |
| Ala Thr Ala Trp Tyr Gly Asn Arg Ile Val Gln Glu Phe Tyr Asp | 140 | 145 | 150 |
| Pro Met Thr Pro Val Asn Ala Arg Tyr Glu Phe Gly Gln Ala Leu | 155 | 160 | 165 |
| Phe Thr Gly Trp Ala Ala Ala Ser Leu Cys Leu Leu Gly Gly Ala | 170 | 175 | 180 |
| Leu Leu Cys Cys Ser Cys Pro Arg Lys Thr Thr Ser Tyr Pro Thr | 185 | 190 | 195 |
| Pro Arg Pro Tyr Pro Lys Pro Ala Pro Ser Ser Gly Lys Asp Tyr | 200 | 205 | 210 |

Val

<210> 271
 <211> 564
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 21, 69, 163, 434, 436, 444
 <223> unknown base

<400> 271
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 ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150

ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200
ctttgactcc ttgctgaatc tgagcagcac attgcaagca acccgtgcct 250
tgatgggtggg tggcatcctc ctgggagtga tagcaatctt tgtggccacc 300
gttggcatga agtgtatgaa gtgcttggaa gacgatgagg tgcagaagat 350
gaggatggct gtcattgggg gcgcgatatt tcttcttgca ggtctggcta 400
ttttagtgtc cacagcatgg tatggcaata gaancnttca acanttctat 450
gaccctatga cccagtcac tgccaggtac gaatttggtc aggctctctt 500
cactggctgg gctgctgctt ctctctgcct tctgggaggt gccctacttt 550
gctgttcctg tccc 564

<210> 272

<211> 498

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 30, 49, 102, 141, 147, 171, 324-325, 339-341

<223> unknown base

<400> 272

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tccagctgtt gggcttcatt ctccccttcc tgggatggac cggcgcccat 100
cntcagcact gccctgcccc agtggaggat ttactcctat nccggcnaca 150
acatcgtgac cgcccaggcc ntgtacgagg ggctgtggat gtcttgctg 200
tcgcagagca ccgggcagat ccagtgcaca gtctttgact cccttgctga 250
atctgagcag cacattgcaa gcaaccctg ccttgatggt ggttggcatc 300
ctcctgggag tgatagcaat cttnttggcc accgttgtnn ntgaagtgt 350
tgaagtgtt ggaagacgat gaggtgcaga agatgaggat ggctgtcatt 400
gggggcgcga tatttcttct tgcaggtctg gctattttag ttgccacagc 450
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccga 498

<210> 273

<211> 552

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 25, 57, 67, 94-95, 116, 152, 165, 212, 233, 392-394
<223> unknown base

<400> 273

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gatgaancgc gccatcntca gactccctgc cccatggaga tttnnccat 100
gctggcgaca acatcntgac cccagccat gtacgagggg ctttgaacgt 150
cngcgtgtcg cagancaccg ggcagatcca gtgcaaagtc tttgactcct 200
tgctgaatct gngcagcaca ttgcagcaac ccntgccctg atggtgggtg 250
gcatcctcct gggagtata gcaatctttg tggccaccgt tggcatgaag 300
tgtatgaagt gcttgaaga cgatgaggtg cagaagatga ggatggctgt 350
cattgggggc gcgatatttc ttcttgacag tctggctatt tnnngttgcc 400
acagcatggt atggcaatag aatcggtcaa gaattctatg accctatgac 450
cccagtcaat gccaggtacg aatttggtca ggctctcttc actggctggg 500
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ga 552

<210> 274

<211> 526

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407

<223> unknown base

<400> 274

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tggaggattn actcctatgc tggcgacaac atcgtgaccc cccaggccat 100
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ccagtgcaaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200
caaccctgac cttgatgggg ttggcatcct cctgggagtg atagcaacct 250
ttgtggccac cgttggcatg aagtgtatga agtgcttga agacgatgag 300
gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttggtg 350
caggtctggc tattttagtn gccacagcat ggtatggcaa tagantnntt 400
cnnngnntct atgacctat gacccagtc aatgccaggt acgaatttgg 450

tcaggctctc ttcactgggt gggctgctgc ttctctctgc cttctgggag 500

gtgccctact ttgctgttcc tgtccc 526

<210> 275

<211> 398

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274

<223> unknown base

<400> 275

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gcagcacatt ncaagcaacc cttgccttg aagggtggtg ncatcccccc 100

tgggagtga tagcaatctt tgtggccacc gttggcatga agtntatgaa 150

gtgcttgga gacgatgagg tgcagaagat gaggatggct gtcattgggg 200

gogcgatatt tcttcttgca ggtctggcta ttttagtnnc cacagcatgg 250

tatggcaata gnatnnttcg nggnttctat gaccctatga cccagtcaa 300

tgccaggtag gaatttggtc aggtctctct cactggctgg gctgctgctt 350

ctctctgcct tctgggaggt gccctacttt gctgttcttg tccccgaa 398

<210> 276

<211> 495

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476

<223> unknown base

<400> 276

agcaatgccc tgccccagt ggaggattaa ttcctatgnt ggggacaaca 50

ttgtgacngc ccaggccatg tacggggggc tgtggatgtc ctgcgtgtcg 100

cagagcaccg ggcagatcca gtgcaaagtn tttgactcct tgctgaattt 150

gagcagcaca ttgcaagcaa cccgtgcctt gatgggtggtt ggcattcttc 200

tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250

tgcttggaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300

ogcgatatatt cttnttgcag gtctggctat tttagttgcc acagcatggt 350

atggcaatag aatngttcaa gaattttatg accctatgac cccagtcaat 400

gccaggtacg aatttgggtca ggctttnttc actggctggg ctgctgcttn 450

tttctgcctt ntgggaggtg ccctantttg ctgttcctgc gaacc 495

<210> 277

<211> 200

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 34, 87, 138, 147, 163, 165-166, 172

<223> unknown base

<400> 277

tcataggggg ggcgatatt ttttcttgca ggtntgggta ttttagttgc 50

cacagcatgg tatggcaata gaatcggtca agaattntat gaccctatga 100

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gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttcctg 200

<210> 278

<211> 542

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 26, 43, 55, 77, 198, 361-362, 391-392, 396

<223> unknown base

<400> 278

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ttacncctat gctggcgaac aacatcntga ccgcccaggc catgtacgag 100

gggctgtgga atgtcctgcy tgtcccagag caccgggcag atccagtgc 150

aagtctttga ctcttgctg aatctgagca gcacattgca agcaaccntg 200

ccttgatggg ggttggcatc ctctgggag tgatagcaat ctttgtggcc 250

accgttggca tgaaagtgtg tgaagtgtt ggaagacgat gaggtgcaga 300

agatgaggat ggctgtcatt gggggcgaga tatttcttct tgcaggctctg 350

gctatttttag nngccacagc atgggatggc aatcagaccc nntcanaaac 400

tctatgaccc tatgacccca gtcaatgccg ggtacgaatt tggtcaggct 450

ctcttcaactg gctgggctgc tgcttctctc tgcttctctg gaggtgccct 500

actttgctgt tctgtcccc gaaaaacaac ctcttaccga cg 542

<210> 279
<211> 548
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 90, 115, 147, 228, 387
<223> unknown base

<400> 279
cggggctgca gctgttgggc ttcatctcgc ttctctgggat ggaatcggcg 50
ccatcgctcag cactgccctg ccccatggag gatttactcn tatgctggcg 100
acaacatcgt gaccncccag gccatgtacg aggggctgtg gatgtcngcg 150
tgtcgcagag caccgggcag atccagtgc aagtctttga ctcttgctg 200
aatctgagca gcacattgca agcaacctg ccttgatggt ggttggcatc 250
ctctctggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300
gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350
ggggcgcgat atttcttctt gcaggtcttg ctatttntag ttgccacagc 400
atgggtatggc aatagaatcg ttcaagaatt ctatgacct atgaccccag 450
tcaatgccag gtacgaattt ggtcaggctc tcttcaactgg ctgggctgct 500
gcttctctct gccttctggg aggtgcccta ctttgcctgt cctgcgaa 548

<210> 280
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 280
cgagcgagtc atggccaacg c 21

<210> 281
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 281
gtgtcacacg tagtctttcc cgctgg 26

<210> 282
<211> 43

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 282
ctgcagctgt tgggcttcat tctgccttc ctgggatgga tcg 43

<210> 283
<211> 2285
<212> DNA
<213> Homo sapiens

<400> 283
gcgtgccgtc agctgcgcgg gcaccgcggc ctgcacctcg ccctccgccc 50
ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gccaccccg 100
tagaggaccc ccgcccgtgc cccgaccggt cccgccttt ttgtaaaact 150
taaagcgggc gcagcattaa cgcttccgc cccggtgacc tctcaggggt 200
ctccccgcca aaggtgctcc gccgctaagg aacatggcga aggtggagca 250
ggctctgagc ctgcagccgc agcacgagct caaattccga ggtcccttca 300
ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350
gtgtgtttta aggtgaagac tacagcacca cgtaggtact gtgtgaggcc 400
caacagcggga atcatcgatg caggggcctc aattaatgta tctgtgatgt 450
tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500
gttcagtcta tgtttgctcc aactgacact tcagatatgg aagcagtatg 550
gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600
ttgaattgcc agcagagaat gataaaccac atgatgtaga aataaataaa 650
attatatcca caactgcac aaagacagaa acaccaatag tgtctaagtc 700
tctgagttct tctttgatg acaccgaagt taagaagggt atggaagaat 750
gtaagaggct gcaaggtgaa gttcagaggc tacgggagga gaacaagcag 800
ttcaaggaag aagatggact gcggatgagg aagacagtgc agagcaacag 850
ccccatttca gcattagccc caactgggaa ggaagaaggc cttagcacc 900
ggctcttggc tctggtggtt ttgttcttta tcgttggtgt aattattggg 950
aagattgcct tgtagaggta gcatgcacag gatggtaa at tggattggtg 1000
gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050

aattaatgta tgatgacatc tcacaggtct tgcctttaaa ttaccctcc 1100
ctgcacacac atacacagat acacacacac aaatataatg taacgatctt 1150
ttagaaagtt aaaaatgtat agtaactgat tgagggggaa aaagaatgat 1200
ctttattaat gacaaggaa accatgagta atgccacaat ggcatattgt 1250
aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1300
tctcttaaaa tgacaccctt cctgcctgt tgggtgctggc ccttggggag 1350
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acgtggccca ctcccgccc aggctgcttt ccgtgtcttc agttctgtcc 1450
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ttgcactgtg gcagcatcag acgtactcgt cataagtga aggcgtgtgt 1550
tgactgattg acccagcgt ttggaaataa atggcagtc tttgttact 1600
taaagggacc aagctaaatt tgtattggt catgtagtga agtcaaactg 1650
ttattcagag atgtttaatg catatttaac ttatttaatg tatttcact 1700
catgttttct tattgtcaca agagtacagt taatgctgcg tgctgctgaa 1750
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ctctggagag tctggtcatg tggaggtggg gtttattggg atgctggaga 1850
agagctgcca ggaagtgttt tttctgggtc agtaaataac aactgtcata 1900
gggagggaaa ttctcagtag tgacagtcaa ctctaggta ctttttttaa 1950
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actcacactt ccagcgccca ggtccaagtc tgagcctgac ctccccttg 2050
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gcgagggcac cagcagttgt ggggtggggag caagggaaga gagaaactct 2150
tcagcgaatc cttctagtag tagttgagag tttgactgtg aattaatttt 2200
atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa 2250
agaaaaatta taataaagcc ccaaaattaa gaaaa 2285

<210> 284

<211> 243

<212> PRT

<213> Homo sapiens

<400> 284

Met Ala Lys Val Glu Gln Val Leu Ser Leu Glu Pro Gln His Glu

| 1 | 5 | 10 | 15 |
|---|-----|-----|-----|
| Leu Lys Phe Arg Gly Pro Phe Thr Asp Val Val Thr Thr Asn Leu | 20 | 25 | 30 |
| Lys Leu Gly Asn Pro Thr Asp Arg Asn Val Cys Phe Lys Val Lys | 35 | 40 | 45 |
| Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly Ile | 50 | 55 | 60 |
| Ile Asp Ala Gly Ala Ser Ile Asn Val Ser Val Met Leu Gln Pro | 65 | 70 | 75 |
| Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val | 80 | 85 | 90 |
| Gln Ser Met Phe Ala Pro Thr Asp Thr Ser Asp Met Glu Ala Val | 95 | 100 | 105 |
| Trp Lys Glu Ala Lys Pro Glu Asp Leu Met Asp Ser Lys Leu Arg | 110 | 115 | 120 |
| Cys Val Phe Glu Leu Pro Ala Glu Asn Asp Lys Pro His Asp Val | 125 | 130 | 135 |
| Glu Ile Asn Lys Ile Ile Ser Thr Thr Ala Ser Lys Thr Glu Thr | 140 | 145 | 150 |
| Pro Ile Val Ser Lys Ser Leu Ser Ser Ser Leu Asp Asp Thr Glu | 155 | 160 | 165 |
| Val Lys Lys Val Met Glu Glu Cys Lys Arg Leu Gln Gly Glu Val | 170 | 175 | 180 |
| Gln Arg Leu Arg Glu Glu Asn Lys Gln Phe Lys Glu Glu Asp Gly | 185 | 190 | 195 |
| Leu Arg Met Arg Lys Thr Val Gln Ser Asn Ser Pro Ile Ser Ala | 200 | 205 | 210 |
| Leu Ala Pro Thr Gly Lys Glu Glu Gly Leu Ser Thr Arg Leu Leu | 215 | 220 | 225 |
| Ala Leu Val Val Leu Phe Phe Ile Val Gly Val Ile Ile Gly Lys | 230 | 235 | 240 |

Ile Ala Leu

<210> 285

<211> 418

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 40, 53, 68, 119, 134, 177-178, 255

<223> unknown base

<400> 285

gtcagtccttc tagattgtcc ttatcccacc tttcaaccan tactcacatt 50
tcnagcgccc aggtccangt ctgagcctga cttccccttg gggacctagc 100
ctggagtcag gacaatggnt cgggctgcag aggnntagaa gcgagggcac 150
cagcagtttt gggtggggag caagggngga gagaaactct tcagcgaatc 200
cttctagtac tagttgagag tttgactgtg aattaatttt atgccataaa 250
agacnaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 300
taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct 350
ctatgggggg aattattatt ttatcatttt tattattttg ccattggaag 400
gttaacttta aaatgagc 418

<210> 286

<211> 543

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 73, 97

<223> unknown base

<400> 286

tattgtaaag gccattttaa accattggta ggccttggtg catgatgctg 50
gattacctcc ttaaatgaca ccnttcctcg cctgttggtg ctggccnttg 100
gggagctgga gcccagcat gctggggagt gcggtcagct ccacacagta 150
gtccccacgt ggcccactcc cggcccaggc tgctttccgt gtcttcagtt 200
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagocca 250
aaggaattgc cactgtggca gcatcagacg tactcgtcat aagtgagagg 300
cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcctt 350
gttcacttaa agggaccaag ctaaattgta ttggttcatg tagtgaagtc 400
aaactgttat tcagagatgt ttaatgcata tttaacttat ttaatgtatt 450
tcattctcatg ttttcttatt gtcacaagag tacagttaat gctgcgtgct 500
gctgaactct gttgggtgaa ctggtattgc tgctggaggg ctg 543

<210> 287

<211> 270

<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242
<223> unknown base

<400> 287
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cttgtagagg tagnatgcac cnggctggta aattggattg gtggatccac 100
catatccatg ggatttaaatt ttatcataac catgtgtaaa aagaaattaa 150
tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200
acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250
agttaaaaat gtatagtaac 270

<210> 288
<211> 428
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 35, 116, 129, 197, 278, 294, 297, 349, 351
<223> unknown base

<400> 288
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gccatcagct ccttgggact gatgaacaga gtcagaagcc caaaggaatt 100
gcactgtggc agcatnagac gtacttgtna taagtgtgag gcgtgtgttg 150
actgattgac ccagcgcttt ggaaataaat ggcagtgcct tgttcantta 200
aagggaccaa gctaaatttg tattggttca tgtagtgaag tcaaactgtt 250
attcagagat gtttaatgca tatttaantt atttaatgta ttnatntca 300
tgtttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350
ntgttggttg aactggtatt gctgctggag ggctgtgggc tcctctgtct 400
ttggagagtc tggatcatgtg gaggtggg 428

<210> 289
<211> 320
<212> DNA
<213> Homo sapiens

<400> 289
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atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100
tactcgatcat aagtgaagagg cgtgtgttga ctgattgacc cagcgctttg 150
gaaataaatg gcagtgccttt gttcacttaa agggaccaag ctaaatttgt 200
attggttcat gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250
atttaactta tttaatgtat ttcattcat gttttcttat tgtcacaaga 300
gtacagttaa tgctgcgtgc 320

<210> 290

<211> 609

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,
447, 481, 513, 532, 584, 598

<223> unknown base

<400> 290

aaacctttaa aagttgaggg gaaaagaatg atcctttatt aatgacaagg 50
gaaaccntgn gtaatgccac aatggcatat tgtaaattgc attttaaaca 100
ttggtagggc ttggtacatg atgctggatt acctctctta aaatgacacc 150
cttcctcgcc tgttgggtgct ggcccttggg gagctngagc ccagcatgct 200
ggggagtgcg gtctgctcca cacagtagtc cccangtggc ccantcccgg 250
cccaggctgc tttccgtgct ttcagttctg tccaagccat cagctccttg 300
ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350
cagangtant ngtcataagt gagaggcgtg tgttgantga ttgaccagc 400
gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450
atttgtattg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500
atgcatattt aanttattta atgtatttca tntcatgttt tcttattgtc 550
acaagggtag agttaatgct gcgtgctgct gaantctgtt gggtagaantg 600
gtattgctg 609

<210> 291

<211> 493

<212> DNA

<213> Homo sapiens

<400> 291

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ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150
aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200
gagaggcgtg tgttgactga ttgaccagc gctttggaaa taaatggcag 250
tgctttgttc acttaaagg accaagctaa atttgtattg gttcatgtag 300
tgaagtcaaa ctgttattca gagatgttta atgcatattt aacttattta 350
atgtatttca tctcatgttt tcttattgtc acaagagtac agttaatgct 400
gcgtgctgct gaactctgtt gggagaactg gtattgctgc tggagggctg 450
tgggctcctc tgtctctgga gagtctggtc atgtggaggt ggg 493

<210> 292

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 292

gcaccaccgt aggtacttgt gtgaggc 27

<210> 293

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 293

aaccaccaga gccaagagcc ggg 23

<210> 294

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 294

cagcggaatc atcgatgcag gggcctcaat taatgtatct gtgatgttac 50

<210> 295

<211> 2530

<212> DNA

<213> Homo sapiens

<400> 295

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ggctggctga gaggtccca gctgcagcgt ccccgccgc ctcccgga 100
gctctgatct cagctgacag tgccctcggg gaccaaaca gcctggcagg 150
gtctcacttt gttgcccagg ctggagttca gtgccatgat catggtttac 200
tgcagccttg acctcctggg ttcaagcgt cctgctgagt agctgggact 250
acaggacaaa attagaagat caaaatggaa aatatgctgc tttggttgat 300
atctttcacc cctgggtgga ccctcattga tggatctgaa atggaatggg 350
atcttatgtg gcacttgaga aaggtacccc ggattgtcag tgaaaggact 400
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gcaccgacag cagggtcagc atcttgga aaaggttctt aaccaatttc 700
cctttcagca cagctgtgaa gctttccacg ggctgtagtg gcattctcat 750
ttcccctcag catgttctaa ctgctgcca ctgtgttcat gatggaaagg 800
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aataaaagtg gaggcaagaa acgtcgaggt tctaagagga gcaggagaga 900
agctagtggg ggtgacaaa gagagggtac cagagagcat ctgcaggaga 950
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gccgaaggga ggccttctt tcagtggacc cgggtcaaga ataccacat 1050
tccgaagggc tgggcacgag gaggcattgg ggacgctacc ttggactatg 1100
actatgctct tctggagctg aagcgtgctc aaaaaagaa atacatggaa 1150
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tggatgtcca cggggttcag aaggactaca acgttgctgt tcgcatcact 1450
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 ggagattttc gtccatttaa aaaatgtata ggtgcagata ttgaaactag 1700
 gtgggcactt caatgccaa tatatactct tctttacatg gtgatgagtt 1750
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 aatgtgaaat tgcatagata aaggtagatg gtaaagcaat tagtatcaga 1950
 atagagacag aaagttacaa cacagtttgt actactctga gatggatcca 2000
 ttcagctcat gccctcaatg tttatattgt gttatctgtt gggctctggga 2050
 catttagttt agtttttttg aagaattaca aatcagaaga aaaagcaagc 2100
 attataaaca aaactaataa ctgttttact gctttaagaa ataacaatta 2150
 caatgtgtat tatttaaaaa tgggagaaat agtttgttct atgaaataaa 2200
 cctagtttag aaataggga gctgagacat tttaagatct caagttttta 2250
 tttaactaat actcaaaata tggacttttc atgtatgcat agggaagaca 2300
 cttcaciaat tatgaatgat catgtgttga aagccacatt attttatgct 2350
 atacattcta tgtatgaggt gctacatttt taggacaaag aattctgtaa 2400
 tctttttcaa gaaagagtct ttttctcctt gacaaaatcc agcttttgta 2450
 tgaggactat aggggtgaatt ctctgattag taattttaga tatgtccttt 2500
 cctaaaaatg aataaaattt atgaatatga 2530

<210> 296

<211> 413

<212> PRT

<213> Homo sapiens

<400> 296

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Met | Leu | Leu | Trp | Leu | Ile | Phe | Phe | Thr | Pro | Gly | Trp |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

Thr Leu Ile Asp Gly Ser Glu Met Glu Trp Asp Phe Met Trp His

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Leu | Arg | Lys | Val | Pro | Arg | Ile | Val | Ser | Glu | Arg | Thr | Phe | His | Leu | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Thr | Ser | Pro | Ala | Phe | Glu | Ala | Asp | Ala | Lys | Met | Met | Val | Asn | Thr | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Val | Cys | Gly | Ile | Glu | Cys | Gln | Lys | Glu | Leu | Pro | Thr | Pro | Ser | Leu | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Ser | Glu | Leu | Glu | Asp | Tyr | Leu | Ser | Tyr | Glu | Thr | Val | Phe | Glu | Asn | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Gly | Thr | Arg | Thr | Leu | Thr | Arg | Val | Lys | Val | Gln | Asp | Leu | Val | Leu | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Glu | Pro | Thr | Gln | Asn | Ile | Thr | Thr | Lys | Gly | Val | Ser | Val | Arg | Arg | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Lys | Arg | Gln | Val | Tyr | Gly | Thr | Asp | Ser | Arg | Phe | Ser | Ile | Leu | Asp | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Lys | Arg | Phe | Leu | Thr | Asn | Phe | Pro | Phe | Ser | Thr | Ala | Val | Lys | Leu | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ser | Thr | Gly | Cys | Ser | Gly | Ile | Leu | Ile | Ser | Pro | Gln | His | Val | Leu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Thr | Ala | Ala | His | Cys | Val | His | Asp | Gly | Lys | Asp | Tyr | Val | Lys | Gly | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Ser | Lys | Lys | Leu | Arg | Val | Gly | Leu | Leu | Lys | Met | Arg | Asn | Lys | Ser | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Gly | Gly | Lys | Lys | Arg | Arg | Gly | Ser | Lys | Arg | Ser | Arg | Arg | Glu | Ala | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Ser | Gly | Gly | Asp | Gln | Arg | Glu | Gly | Thr | Arg | Glu | His | Leu | Gln | Glu | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Arg | Ala | Lys | Gly | Gly | Arg | Arg | Arg | Lys | Lys | Ser | Gly | Arg | Gly | Gln | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Arg | Ile | Ala | Glu | Gly | Arg | Pro | Ser | Phe | Gln | Trp | Thr | Arg | Val | Lys | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Asn | Thr | His | Ile | Pro | Lys | Gly | Trp | Ala | Arg | Gly | Gly | Met | Gly | Asp | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ala | Thr | Leu | Asp | Tyr | Asp | Tyr | Ala | Leu | Leu | Glu | Leu | Lys | Arg | Ala | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| His | Lys | Lys | Lys | Tyr | Met | Glu | Leu | Gly | Ile | Ser | Pro | Thr | Ile | Lys | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Lys | Met | Pro | Gly | Gly | Met | Ile | His | Phe | Ser | Gly | Phe | Asp | Asn | Asp | | | | | |

| | 305 | | 310 | | | 315 | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Asp | Gln | Leu | Val | Tyr | Arg | Phe | Cys | Ser | Val | Ser | Asp | Glu |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ser | Asn | Asp | Leu | Leu | Tyr | Gln | Tyr | Cys | Asp | Ala | Glu | Ser | Gly | Ser |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Thr | Gly | Ser | Gly | Val | Tyr | Leu | Arg | Leu | Lys | Asp | Pro | Asp | Lys | Lys |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Asn | Trp | Lys | Arg | Lys | Ile | Ile | Ala | Val | Tyr | Ser | Gly | His | Gln | Trp |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Val | Asp | Val | His | Gly | Val | Gln | Lys | Asp | Tyr | Asn | Val | Ala | Val | Arg |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Ile | Thr | Pro | Leu | Lys | Tyr | Ala | Gln | Ile | Cys | Leu | Trp | Ile | His | Gly |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Asn | Asp | Ala | Asn | Cys | Ala | Tyr | Gly | | | | | | | |
| | | | | 410 | | | | | | | | | | |

<210> 297

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 297

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<210> 298

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 298

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<210> 299

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 299

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<210> 300

<211> 1869

<212> DNA

<213> Homo sapiens

<400> 300

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gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200
caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250
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cagaacatgc agtaatgtgg actgccacc agaagcaggt gatttccgag 400
ctcagcaatg ctcagctcat aatgatgtca agcaccatgg ccagttttat 450
gaatggcttc ctgtgtctaa tgacctgac aacctatgtt cactcaagtg 500
ccaagccaaa ggaacaacc tggttgttga actagcacct aaggtcttag 550
atggtacgcg ttgctataca gaatctttgg atatgtgcat cagtggttta 600
tgccaaattg ttggctgcga tcaccagctg ggaagcaccg tcaaggaaga 650
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tcacttatat ctggaaacca aaacctcca ggggactaaa ggtgaaaaca 850
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cagaaatttc cagacaaaga gatactgaga atggctggac cactcacagc 950
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 gtttaaagaa agcagtgtct cactggttgt agctttcatg ggttctgaac 1800
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<210> 301

<211> 525

<212> PRT

<213> Homo sapiens

<400> 301

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Cys | Cys | Arg | Arg | Ala | Thr | Pro | Gly | Thr | Leu | Leu | Leu | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Phe | Leu | Leu | Leu | Ser | Ser | Arg | Thr | Ala | Arg | Ser | Glu | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Arg | Asp | Gly | Leu | Trp | Asp | Ala | Trp | Gly | Pro | Trp | Ser | Glu | Cys |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Thr | Cys | Gly | Gly | Gly | Ala | Ser | Tyr | Ser | Leu | Arg | Arg | Cys |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Ser | Lys | Ser | Cys | Glu | Gly | Arg | Asn | Ile | Arg | Tyr | Arg | Thr |
| | | | 65 | | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Asn | Val | Asp | Cys | Pro | Pro | Glu | Ala | Gly | Asp | Phe | Arg | Ala |
| | | | 80 | | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Gln | Cys | Ser | Ala | His | Asn | Asp | Val | Lys | His | His | Gly | Gln | Phe |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Glu | Trp | Leu | Pro | Val | Ser | Asn | Asp | Pro | Asp | Asn | Pro | Cys | Ser |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Lys | Cys | Gln | Ala | Lys | Gly | Thr | Thr | Leu | Val | Val | Glu | Leu | Ala |
| | | | 125 | | | | | | 130 | | | | | 135 |

| | | | |
|---|-----|-----|-----|
| Pro Lys Val Leu Asp Gly Thr Arg Cys Tyr Thr Glu Ser Leu Asp | 140 | 145 | 150 |
| Met Cys Ile Ser Gly Leu Cys Gln Ile Val Gly Cys Asp His Gln | 155 | 160 | 165 |
| Leu Gly Ser Thr Val Lys Glu Asp Asn Cys Gly Val Cys Asn Gly | 170 | 175 | 180 |
| Asp Gly Ser Thr Cys Arg Leu Val Arg Gly Gln Tyr Lys Ser Gln | 185 | 190 | 195 |
| Leu Ser Ala Thr Lys Ser Asp Asp Thr Val Val Ala Leu Pro Tyr | 200 | 205 | 210 |
| Gly Ser Arg His Ile Arg Leu Val Leu Lys Gly Pro Asp His Leu | 215 | 220 | 225 |
| Tyr Leu Glu Thr Lys Thr Leu Gln Gly Thr Lys Gly Glu Asn Ser | 230 | 235 | 240 |
| Leu Ser Ser Thr Gly Thr Phe Leu Val Asp Asn Ser Ser Val Asp | 245 | 250 | 255 |
| Phe Gln Lys Phe Pro Asp Lys Glu Ile Leu Arg Met Ala Gly Pro | 260 | 265 | 270 |
| Leu Thr Ala Asp Phe Ile Val Lys Ile Arg Asn Ser Gly Ser Ala | 275 | 280 | 285 |
| Asp Ser Thr Val Gln Phe Ile Phe Tyr Gln Pro Ile Ile His Arg | 290 | 295 | 300 |
| Trp Arg Glu Thr Asp Phe Phe Pro Cys Ser Ala Thr Cys Gly Gly | 305 | 310 | 315 |
| Gly Tyr Gln Leu Thr Ser Ala Glu Cys Tyr Asp Leu Arg Ser Asn | 320 | 325 | 330 |
| Arg Val Val Ala Asp Gln Tyr Cys His Tyr Tyr Pro Glu Asn Ile | 335 | 340 | 345 |
| Lys Pro Lys Pro Lys Leu Gln Glu Cys Asn Leu Asp Pro Cys Pro | 350 | 355 | 360 |
| Ala Ser Asp Gly Tyr Lys Gln Ile Met Pro Tyr Asp Leu Tyr His | 365 | 370 | 375 |
| Pro Leu Pro Arg Trp Glu Ala Thr Pro Trp Thr Ala Cys Ser Ser | 380 | 385 | 390 |
| Ser Cys Gly Gly Gly Ile Gln Ser Arg Ala Val Ser Cys Val Glu | 395 | 400 | 405 |
| Glu Asp Ile Gln Gly His Val Thr Ser Val Glu Glu Trp Lys Cys | 410 | 415 | 420 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Thr | Pro | Lys | Met | Pro | Ile | Ala | Gln | Pro | Cys | Asn | Ile | Phe |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Asp | Cys | Pro | Lys | Trp | Leu | Ala | Gln | Glu | Trp | Ser | Pro | Cys | Thr | Val |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Thr | Cys | Gly | Gln | Gly | Leu | Arg | Tyr | Arg | Val | Val | Leu | Cys | Ile | Asp |
| | | | | 455 | | | | | 460 | | | | | 465 |
| His | Arg | Gly | Met | His | Thr | Gly | Gly | Cys | Ser | Pro | Lys | Thr | Lys | Pro |
| | | | | 470 | | | | | 475 | | | | | 480 |
| His | Ile | Lys | Glu | Glu | Cys | Ile | Val | Pro | Thr | Pro | Cys | Tyr | Lys | Pro |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Lys | Glu | Lys | Leu | Pro | Val | Glu | Ala | Lys | Leu | Pro | Trp | Phe | Lys | Gln |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Ala | Gln | Glu | Leu | Glu | Glu | Gly | Ala | Ala | Val | Ser | Glu | Glu | Pro | Ser |
| | | | | 515 | | | | | 520 | | | | | 525 |

<210> 302

<211> 1533

<212> DNA

<213> Homo sapiens

<400> 302

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ctgggcgggg cgctgtggct ggcggcccgc cggttcgtgg ggcccagggt 150
ccagcggctg cgcagaggcg gggaccccg cctcatgcac gggaagactg 200
tgctgatcac cggggcgaac agcggcctgg gccgcgccac ggccgcccag 250
ctactgcgcc tgggagcgcg ggtgatcatg ggctgccggg accgcgcgcg 300
cgccgaggag gcggcgggtc agctccgccg cgagctccgc caggccgcgg 350
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gctccaggaa gagcctaggc tggatgtctt gatcaataac gcagggatct 500
tccagtgcc ttacatgaag actgaagatg ggtttgagat gcagttcgga 550
gtgaaccatc tggggcactt tctactcacc aatcttctcc ttggactcct 600
caaaagttca gctcccagca ggattgtggt agtttcttcc aaactttata 650
aatacggaga catcaatttt gatgacttga acagtgaaca aagctataat 700
aaaagctttt gttatagccg gagcaaactg gctaacattc tttttaccag 750

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 aagtacaatg aaaaatacaa ttatattgta aaattataac tgggcaagca 1350
 tggatgacat attaatatatt gtcagaatta agtgactcaa agtgctatcg 1400
 agaggttttt caagtatctt tgagtttcat ggccaaagtg ttaactagtt 1450
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<210> 303

<211> 336

<212> PRT

<213> Homo sapiens

<400> 303

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Ala | Thr | Ala | Ala | Ala | Val | Leu | Ala | Ala | Leu | Gly | Gly |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Trp | Leu | Ala | Ala | Arg | Arg | Phe | Val | Gly | Pro | Arg | Val | Gln |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Leu | Arg | Arg | Gly | Gly | Asp | Pro | Gly | Leu | Met | His | Gly | Lys | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ile | Thr | Gly | Ala | Asn | Ser | Gly | Leu | Gly | Arg | Ala | Thr | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Glu | Leu | Leu | Arg | Leu | Gly | Ala | Arg | Val | Ile | Met | Gly | Cys | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Arg | Ala | Arg | Ala | Glu | Glu | Ala | Ala | Gly | Gln | Leu | Arg | Arg | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Gln | Ala | Ala | Glu | Cys | Gly | Pro | Glu | Pro | Gly | Val | Ser | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | 95 | 100 | 105 |
|---|-----|-----|-----|
| Val Gly Glu Leu Ile Val Arg Glu Leu Asp Leu Ala Ser Leu Arg | 110 | 115 | 120 |
| Ser Val Arg Ala Phe Cys Gln Glu Met Leu Gln Glu Glu Pro Arg | 125 | 130 | 135 |
| Leu Asp Val Leu Ile Asn Asn Ala Gly Ile Phe Gln Cys Pro Tyr | 140 | 145 | 150 |
| Met Lys Thr Glu Asp Gly Phe Glu Met Gln Phe Gly Val Asn His | 155 | 160 | 165 |
| Leu Gly His Phe Leu Leu Thr Asn Leu Leu Leu Gly Leu Leu Lys | 170 | 175 | 180 |
| Ser Ser Ala Pro Ser Arg Ile Val Val Val Ser Ser Lys Leu Tyr | 185 | 190 | 195 |
| Lys Tyr Gly Asp Ile Asn Phe Asp Asp Leu Asn Ser Glu Gln Ser | 200 | 205 | 210 |
| Tyr Asn Lys Ser Phe Cys Tyr Ser Arg Ser Lys Leu Ala Asn Ile | 215 | 220 | 225 |
| Leu Phe Thr Arg Glu Leu Ala Arg Arg Leu Glu Gly Thr Asn Val | 230 | 235 | 240 |
| Thr Val Asn Val Leu His Pro Gly Ile Val Arg Thr Asn Leu Gly | 245 | 250 | 255 |
| Arg His Ile His Ile Pro Leu Leu Val Lys Pro Leu Phe Asn Leu | 260 | 265 | 270 |
| Val Ser Trp Ala Phe Phe Lys Thr Pro Val Glu Gly Ala Gln Thr | 275 | 280 | 285 |
| Ser Ile Tyr Leu Ala Ser Ser Pro Glu Val Glu Gly Val Ser Gly | 290 | 295 | 300 |
| Arg Tyr Phe Gly Asp Cys Lys Glu Glu Glu Leu Leu Pro Lys Ala | 305 | 310 | 315 |
| Met Asp Glu Ser Val Ala Arg Lys Leu Trp Asp Ile Ser Glu Val | 320 | 325 | 330 |
| Met Val Gly Leu Leu Lys | 335 | | |

<210> 304
 <211> 521
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure

<222> 20, 34, 62, 87, 221, 229
<223> unknown base

<400> 304
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gtgatcagga atggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200
tttgatattg gaatagcctg ntaagaggna catgtgggta ttttggagtt 250
actgaaaaat ttttttggg ataagagaat ttcagcaaag atgttttaaa 300
tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350
attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400
gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450
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<210> 305
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 305
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<210> 306
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 306
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<210> 307
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 307

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<210> 308

<211> 1523

<212> DNA

<213> Homo sapiens

<400> 308

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cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 200
gggtttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250
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caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550
caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600
tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaggact 650
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tggcgacaac ataattctaca aaccaccagg gcattctgct ccggatatgg 800
tgtacttggg agctatgaca aattttgatg tgacttaca ttggattcaa 850
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900
attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950
atacagaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000
agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050
acatcctctt ctgcacatac agaaaactcc agcagattgt cctgtaatcg 1100
ctattgacag ctttaggcat atgtatgtgt ttggagactt caaagatgta 1150
ttaattcctg gaaaactcaa gcaattcgta ttgacttac attctggaaa 1200
actgcacaga gaattccatc atggacctga cccaactgat acagccccag 1250

gagagcaagc ccaagatgta gcaagcagtc cacctgagag ctccttccag 1300
 aaactagcac ccagtgaata taggtatact ctattgaggg atcgagatga 1350
 gctttaaaaa cttgaaaaac agtttgtaag cctttcaaca gcagcatcaa 1400
 cctacgtggt ggaaatagta aacctatatt ttcataattc tatgtgtatt 1450
 tttattttga ataaacagaa agaaatttaa aaaaaaaaaa aaaaaaaaaa 1500
 aaaaaaaaaa aaaaaaaaaa aaa 1523

<210> 309
 <211> 406
 <212> PRT
 <213> Homo sapiens

<400> 309
 Met His Pro Ala Val Phe Leu Ser Leu Pro Asp Leu Arg Cys Ser
 1 5 10 15
 Leu Leu Leu Leu Val Thr Trp Val Phe Thr Pro Val Thr Thr Glu
 20 25 30
 Ile Thr Ser Leu Ala Thr Glu Asn Ile Asp Glu Ile Leu Asn Asn
 35 40 45
 Ala Asp Val Ala Leu Val Asn Phe Tyr Ala Asp Trp Cys Arg Phe
 50 55 60
 Ser Gln Met Leu His Pro Ile Phe Glu Glu Ala Ser Asp Val Ile
 65 70 75
 Lys Glu Glu Phe Pro Asn Glu Asn Gln Val Val Phe Ala Arg Val
 80 85 90
 Asp Cys Asp Gln His Ser Asp Ile Ala Gln Arg Tyr Arg Ile Ser
 95 100 105
 Lys Tyr Pro Thr Leu Lys Leu Phe Arg Asn Gly Met Met Met Lys
 110 115 120
 Arg Glu Tyr Arg Gly Gln Arg Ser Val Lys Ala Leu Ala Asp Tyr
 125 130 135
 Ile Arg Gln Gln Lys Ser Asp Pro Ile Gln Glu Ile Arg Asp Leu
 140 145 150
 Ala Glu Ile Thr Thr Leu Asp Arg Ser Lys Arg Asn Ile Ile Gly
 155 160 165
 Tyr Phe Glu Gln Lys Asp Ser Asp Asn Tyr Arg Val Phe Glu Arg
 170 175 180
 Val Ala Asn Ile Leu His Asp Asp Cys Ala Phe Leu Ser Ala Phe
 185 190 195

| | | | |
|---|-----|-----|-----|
| Gly Asp Val Ser Lys Pro Glu Arg Tyr Ser Gly Asp Asn Ile Ile | 200 | 205 | 210 |
| Tyr Lys Pro Pro Gly His Ser Ala Pro Asp Met Val Tyr Leu Gly | 215 | 220 | 225 |
| Ala Met Thr Asn Phe Asp Val Thr Tyr Asn Trp Ile Gln Asp Lys | 230 | 235 | 240 |
| Cys Val Pro Leu Val Arg Glu Ile Thr Phe Glu Asn Gly Glu Glu | 245 | 250 | 255 |
| Leu Thr Glu Glu Gly Leu Pro Phe Leu Ile Leu Phe His Met Lys | 260 | 265 | 270 |
| Glu Asp Thr Glu Ser Leu Glu Ile Phe Gln Asn Glu Val Ala Arg | 275 | 280 | 285 |
| Gln Leu Ile Ser Glu Lys Gly Thr Ile Asn Phe Leu His Ala Asp | 290 | 295 | 300 |
| Cys Asp Lys Phe Arg His Pro Leu Leu His Ile Gln Lys Thr Pro | 305 | 310 | 315 |
| Ala Asp Cys Pro Val Ile Ala Ile Asp Ser Phe Arg His Met Tyr | 320 | 325 | 330 |
| Val Phe Gly Asp Phe Lys Asp Val Leu Ile Pro Gly Lys Leu Lys | 335 | 340 | 345 |
| Gln Phe Val Phe Asp Leu His Ser Gly Lys Leu His Arg Glu Phe | 350 | 355 | 360 |
| His His Gly Pro Asp Pro Thr Asp Thr Ala Pro Gly Glu Gln Ala | 365 | 370 | 375 |
| Gln Asp Val Ala Ser Ser Pro Pro Glu Ser Ser Phe Gln Lys Leu | 380 | 385 | 390 |
| Ala Pro Ser Glu Tyr Arg Tyr Thr Leu Leu Arg Asp Arg Asp Glu | 395 | 400 | 405 |

Leu

<210> 310

<211> 182

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 36, 48

<223> unknown base

<400> 310

attaaggaag aatttccaaa tgaaaatcaa gtagtntttg ccagagtnga 50
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150
ggtcagcgat cagtgaaagc attggcagat ta 182

<210> 311

<211> 598

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396

<223> unknown base

<400> 311

agaggcctct ctggaagttg tcccgggtgt tcgccgcngg agcccgggtc 50
gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 100
cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150
ccagcgcttg tccctgtcnc ggancccagc gtnaccatgc atcctgccgt 200
cttctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 250
gggtttttac tcctgtaaca actgaaataa cnngtcttga tacnnagaat 300
atagatgaaa ttttaaacna tgctgatgtg gctttagtca atttttatgc 350
tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 500
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598

<210> 312

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 312

tgagaggcct ctctggaagt tg 22

<210> 313

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 313

gtcagcgatc agtgaaagc 19

<210> 314

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 314

ccagaatgaa gtagctcggc 20

<210> 315

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 315

ccgactcaaaa atgcattgtc 20

<210> 316

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 316

catttggcag gaattgtcc 19

<210> 317

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 317

ggtgctatag gccaaagg 18

<210> 318

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 318

ctgtatctct gggctatgtc agag 24

<210> 319

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctacatataa tggcacatgt cagcc 25

<210> 320

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

cgtcttccta tccttaccgc acctcagatg ctcccttctg ctctg 46

<210> 321

<211> 1333

<212> DNA

<213> Homo sapiens

<400> 321

gcccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50

cgctgctgct cactgccgcg ctcatcttct tcgccatttg gcacattata 100

gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150

taccctgaat ccccttgtag tcccagagta cctcatccac gctttcttct 200

gtgtcatgtt tctttgtgca gcagagtggc ttacactggg tctcaatatg 250

cccctcttgg catatcatat ttggaggtat atgagtagac cagtgatgag 300

tggcccagga ctctatgacc ctacaaccat catgaatgca gatattctag 350

catattgtca gaaggaagga tgggtgcaaat tagcttttta tcttctagca 400

tttttttact acctatatgg catgatctat gttttggtga gctcttagaa 450

caacacacag aagaattggc ccagttaagt gcatgcaaaa agccacaaa 500

tgaagggtat ctatccagca agatcctgtc caagagtagc ctgtggaatc 550

tgatcagtta ctttaaaaaa tgactcctta ttttttaaata gtttccacat 600

ttttgcttgt ggaaagactg ttttcatatg ttatactcag ataaagattt 650
 taaatggtat tacgtataaa ttaatatata atgattacct ctggtgttga 700
 caggtttgaa cttgcacttc ttaaggaaca gccataatcc tctgaatgat 750
 gcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800
 cttgtagggc tcatttttgt ttcatggaaa cagtatctaa ttataaatta 850
 gctgtagata tcaggtgctt ctgatgaagt gaaaatgtat atctgactag 900
 tgggaaaactt catgggtttc ctcatctgtc atgtcgatga ttatatatgg 950
 atacatttac aaaaataaaa agcgggaatt ttcccttcgc ttgaatatta 1000
 tccctgtata ttgcatgaat gagagatttc ccatatttcc atcagagtaa 1050
 taaatatact tgctttaatt cttaagcata agtaaacaatg atataaaaat 1100
 atatgctgaa ttacttgtga agaatgcatt taaagctatt ttaaatgtgt 1150
 ttttatttgt aagacattac ttattaagaa attggttatt atgcttactg 1200
 ttctaactctg gtggtaaagg tattcttaag aatttgcagg tactacagat 1250
 tttcaaaact gaatgagaga aaattgtata accatcctgc tgttccttta 1300
 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322
 <211> 144
 <212> PRT
 <213> Homo sapiens

<400> 322

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Phe | Thr | Phe | Ala | Ala | Phe | Cys | Tyr | Met | Leu | Ala | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Leu | Thr | Ala | Ala | Leu | Ile | Phe | Phe | Ala | Ile | Trp | His | Ile | Ile | Ala |
| | | | | 20 | | | | | 25 | | | | 30 | |
| Phe | Asp | Glu | Leu | Lys | Thr | Asp | Tyr | Lys | Asn | Pro | Ile | Asp | Gln | Cys |
| | | | | 35 | | | | | 40 | | | | 45 | |
| Asn | Thr | Leu | Asn | Pro | Leu | Val | Leu | Pro | Glu | Tyr | Leu | Ile | His | Ala |
| | | | | 50 | | | | | 55 | | | | 60 | |
| Phe | Phe | Cys | Val | Met | Phe | Leu | Cys | Ala | Ala | Glu | Trp | Leu | Thr | Leu |
| | | | | 65 | | | | | 70 | | | | 75 | |
| Gly | Leu | Asn | Met | Pro | Leu | Leu | Ala | Tyr | His | Ile | Trp | Arg | Tyr | Met |
| | | | | 80 | | | | | 85 | | | | 90 | |
| Ser | Arg | Pro | Val | Met | Ser | Gly | Pro | Gly | Leu | Tyr | Asp | Pro | Thr | Thr |
| | | | | 95 | | | | | 100 | | | | 105 | |

Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys Gln Lys Glu Gly Trp
110 115 120

Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe Tyr Tyr Leu Tyr
125 130 135

Gly Met Ile Tyr Val Leu Val Ser Ser
140

<210> 323

<211> 477

<212> DNA

<213> Homo sapiens

<400> 323

attatagcat ttgatgagct gaagactgat tacaagatcc tatagaccag 50

tgtaataccc tgaatcccct tgtactccca gagtacctca tccacgcttt 100

cttctgtgtc atgtttcttt gtgcagcaga gtggcttaca ctgggtctca 150

atatgcccct cttggcatat catatttggg ggtatatgag tagaccagtg 200

atgagtggcc caggactcta tgaccctaca accatcatga atgcagatat 250

tctagcatat tgtcagaagg aaggatgggtg caaattagct ttttatcttc 300

tagcattttt ttactaccta tatggcatga tctatgtttt ggtgagctct 350

tagaacaaca cacagaagaa ttggtccagt taagtgcagc caaaaagcca 400

ccaaatgaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450

gaatctgac agttacttta aaaaatg 477

<210> 324

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 324

tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 325

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 325

caggaaacag ctatgaccac ctgcacacct gcaaattccat t 41

<210> 326
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 326
gtgcagcaga gtggcttaca 20

<210> 327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 327
actggaccaa ttcttctgtg 20

<210> 328
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 328
gatattctag catattgtca gaaggaagga tgggtgcaa tagct 45

<210> 329
<211> 1174
<212> DNA
<213> Homo sapiens

<400> 329
cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50
tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100
ggacccaact ggggctcccg ccgctgctgc tgctgaccat ggccttggcc 150
ggaggttcgg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200
tacggcgtct tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250
accctaagga agaggagttg tacgcatgtc agagagggtg caggctgttt 300
tcaatttgtc agtttgtgga tgatggaatt gacttaaadc gaactaaatt 350
ggaatgtgaa tctgcatgta cagaagcata ttccaatct gatgagcaat 400
atgcttgcca tcttggttgc cagaatcagc tgccattcgc tgaactgaga 450

caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500
 aactctggtg aggtcattct ggagtgcacat gatggactcc gcacagagct 550
 tcataacctc ttcattggact ttttatcttc aagccgatga cggaaaaata 600
 gttatattcc agtctaagcc agaaatccag tacgcaccac atttggagca 650
 ggagcctaca aatttgagag aatcatctct aagcaaaatg tcctatctgc 700
 aaatgagaaa ttcacaagcg cacaggaatt ttcttgaaga tggagaaagt 750
 gatggctttt taagatgcct ctctcttaac tctgggtgga ttttaactac 800
 aactcttgct ctctcgggtga tggattgct ttggatttgt tgtgcaactg 850
 ttgctacagc tgtggagcag tatgttcct ctgagaagct gagtatctat 900
 ggtgacttgg agtttatgaa tgaacaaaag ctaaacagat atccagcttc 950
 ttctcttggt gttgttagat ctaaaactga agatcatgaa gaagcagggc 1000
 ctctacctac aaaagtgaat cttgctcatt ctgaaattta agcatttttc 1050
 ttttaaaaga caagtgaat agacatctaa aattccactc ctcatagagc 1100
 ttttaaaatg gtttcattgg atataggcct taagaaatca ctataaaatg 1150
 caaataaagt tactcaaatc tgtg 1174

<210> 330

<211> 323

<212> PRT

<213> Homo sapiens

<400> 330

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Pro | Lys | Gly | Ser | Leu | Trp | Val | Arg | Thr | Gln | Leu | Gly |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Leu | Pro | Pro | Leu | Leu | Leu | Leu | Thr | Met | Ala | Leu | Ala | Gly | Gly | Ser |
| | | | 20 | | | | | | 25 | | | | 30 | |
| Gly | Thr | Ala | Ser | Ala | Glu | Ala | Phe | Asp | Ser | Val | Leu | Gly | Asp | Thr |
| | | | 35 | | | | | | 40 | | | | 45 | |
| Ala | Ser | Cys | His | Arg | Ala | Cys | Gln | Leu | Thr | Tyr | Pro | Leu | His | Thr |
| | | | 50 | | | | | | 55 | | | | 60 | |
| Tyr | Pro | Lys | Glu | Glu | Glu | Leu | Tyr | Ala | Cys | Gln | Arg | Gly | Cys | Arg |
| | | | 65 | | | | | | 70 | | | | 75 | |
| Leu | Phe | Ser | Ile | Cys | Gln | Phe | Val | Asp | Asp | Gly | Ile | Asp | Leu | Asn |
| | | | 80 | | | | | | 85 | | | | 90 | |
| Arg | Thr | Lys | Leu | Glu | Cys | Glu | Ser | Ala | Cys | Thr | Glu | Ala | Tyr | Ser |
| | | | 95 | | | | | | 100 | | | | 105 | |

| | | | |
|---|-----|-----|-----|
| Gln Ser Asp Glu Gln Tyr Ala Cys His Leu Gly Cys Gln Asn Gln | 110 | 115 | 120 |
| Leu Pro Phe Ala Glu Leu Arg Gln Glu Gln Leu Met Ser Leu Met | 125 | 130 | 135 |
| Pro Lys Met His Leu Leu Phe Pro Leu Thr Leu Val Arg Ser Phe | 140 | 145 | 150 |
| Trp Ser Asp Met Met Asp Ser Ala Gln Ser Phe Ile Thr Ser Ser | 155 | 160 | 165 |
| Trp Thr Phe Tyr Leu Gln Ala Asp Asp Gly Lys Ile Val Ile Phe | 170 | 175 | 180 |
| Gln Ser Lys Pro Glu Ile Gln Tyr Ala Pro His Leu Glu Gln Glu | 185 | 190 | 195 |
| Pro Thr Asn Leu Arg Glu Ser Ser Leu Ser Lys Met Ser Tyr Leu | 200 | 205 | 210 |
| Gln Met Arg Asn Ser Gln Ala His Arg Asn Phe Leu Glu Asp Gly | 215 | 220 | 225 |
| Glu Ser Asp Gly Phe Leu Arg Cys Leu Ser Leu Asn Ser Gly Trp | 230 | 235 | 240 |
| Ile Leu Thr Thr Thr Leu Val Leu Ser Val Met Val Leu Leu Trp | 245 | 250 | 255 |
| Ile Cys Cys Ala Thr Val Ala Thr Ala Val Glu Gln Tyr Val Pro | 260 | 265 | 270 |
| Ser Glu Lys Leu Ser Ile Tyr Gly Asp Leu Glu Phe Met Asn Glu | 275 | 280 | 285 |
| Gln Lys Leu Asn Arg Tyr Pro Ala Ser Ser Leu Val Val Val Arg | 290 | 295 | 300 |
| Ser Lys Thr Glu Asp His Glu Glu Ala Gly Pro Leu Pro Thr Lys | 305 | 310 | 315 |
| Val Asn Leu Ala His Ser Glu Ile | 320 | | |

<210> 331

<211> 350

<212> DNA

<213> Homo sapiens

<400> 331

ttgggtgata cggcgtcttg ccaccgggcc tgtcagttga cctaccctt 50

gcacacctac cctaaggaag aggagttgta cgcattgtag agagggtgca 100

ggctgttttc aattgtgcag tttgtggatg atggaattga cttaaatacga 150

actaaattgg aatgtgaatc tgcattgtaca gaagcatatt cccaatctga 200
tgagcaatat gcttgccatc ttggttgcca gaatcagctg ccattcgctg 250
aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300
tttcctctaa ctctgggtgag gtcattctgg agtgacatga tggactccgc 350

<210> 332
<211> 562
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 47
<223> unknown base

<400> 332
cacactggcc ggatctttta gagtcctttg accttgacca agggtcngga 50
aaacagcaac aagctgagct gctgtgacag agggacaag atggcggcgc 100
cgaaggagc ctttgggtga ggaccaact ggggctcccg ccgctgctgc 150
tgctgacat ggcttggtg ggaggttcgg ggaccgcttc ggctgaagca 200
tttgactcgg tcttgggtga tacggcgtct tgccaccggg cctgtcagtt 250
gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300
agagaggttg caggctgttt tcaatttgtc agtttgtgga tgatggaatt 350
gacttaaadc gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400
ttcccaatct gatgagcaat atgcttgcca tcttgggtgc cagaatcagc 450
tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaaa 500
atgcacctac tctttcctct aactctggtg aggtcattct ggagtgcacat 550
gatggactcc gc 562

<210> 333
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 333
acaagctgag ctgctgtgac ag 22

<210> 334
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 334
tgattctggc aaccaagatg gc 22

<210> 335
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 335
atggccttgg ccggagggtc ggggaccgct tcggctgaag 40

<210> 336
<211> 1885
<212> DNA
<213> Homo sapiens

<400> 336
gcgaggtggc gatcgctgag aggcaggagg gccgaggcgg gcctgggagg 50
cgggccggag gtggggcgcc gctggggccg gccgcacagg gttcatctg 100
agggcgcacg gccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150
gcgacaagct gccggagctg caatgggccc cggtgggga ttcttgttt 200
gcctcctggg cgccgtgtgg ctgctcagct cgggccacgg agaggagcag 250
cccccgaga cagcggcaca gaggtgcttc tgccagggtta gtggttactt 300
ggatgattgt acctgtgatg ttgaaacat tgatagattt aataactaca 350
ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400
tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450
gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500
ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550
ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600
tctgagtgag gaaacacaga aggctgttct tcagtggacc aagcatgatg 650
attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700
gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750
accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800

agccacagac aattaaaaga cttttaaatc ctttggttc tggtaagg 850
 acaagtgaag agaacaactt ttacagttgg ctagaaggtc tctgtgtaga 900
 aaaaagagca ttctacagac ttatatctgg cctacatgca agcattaatg 950
 tgcatttgag tgcaagatat cttttacaag agacctggtt agaaaagaaa 1000
 tggggacaca acattacaga atttcaacag cgatttgatg gaattttgac 1050
 tgaaggagaa ggtccaagaa ggcttaagaa cttgtatctt ctctacttaa 1100
 tagaactaag ggctttatcc aaagtgttac cattcttcga gcgcccagat 1150
 tttcaactct ttactggaaa taaaattcag gatgaggaaa acaaaatggt 1200
 acttctggaa atacttcag aaatcaagtc atttcctttg cattttgatg 1250
 agaattcatt ttttgctggg gataaaaaag aagcacacaa actaaaggag 1300
 gactttcgac tgcattttag aaatatttca agaattatgg attgtgttg 1350
 ttgttttaaa tgtcgtctgt ggggaaagct tcagactcag ggtttgggca 1400
 ctgctctgaa gatcttattt tctgagaaat tgatagcaaa tatgccagaa 1450
 agtggaccta gttatgaatt ccatctaacc agacaagaaa tagtatcatt 1500
 attcaacgca tttggaagaa tttctacaag tgtgaaagaa ttagaaaact 1550
 tcaggaactt gttacagaat attcattaaa gaaaacaagc tgatatgtgc 1600
 ctgtttctgg acaatggagg cgaaagagtg gaatttcatt caaaggcata 1650
 atagcaatga cagtcttaag ccaaacattt tatataaagt tgcttttgta 1700
 aaggagaatt atattgtttt aagtaaacac atttttaaaa attgtgttaa 1750
 gtctatgtat aatactactg tgagtaaaaag taatacttta ataatgtggt 1800
 acaaatttta aagtttaata ttgaataaaa ggaggattat caaattaaaa 1850
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 1885

<210> 337

<211> 468

<212> PRT

<213> Homo sapiens

<400> 337

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Gly | Trp | Gly | Phe | Leu | Phe | Gly | Leu | Leu | Gly | Ala | Val |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Leu | Leu | Ser | Ser | Gly | His | Gly | Glu | Glu | Gln | Pro | Pro | Glu | Thr |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | |
|---|-----|-----|-----|
| Ala Ala Gln Arg Cys Phe Cys Gln Val Ser Gly Tyr Leu Asp Asp | 35 | 40 | 45 |
| Cys Thr Cys Asp Val Glu Thr Ile Asp Arg Phe Asn Asn Tyr Arg | 50 | 55 | 60 |
| Leu Phe Pro Arg Leu Gln Lys Leu Leu Glu Ser Asp Tyr Phe Arg | 65 | 70 | 75 |
| Tyr Tyr Lys Val Asn Leu Lys Arg Pro Cys Pro Phe Trp Asn Asp | 80 | 85 | 90 |
| Ile Ser Gln Cys Gly Arg Arg Asp Cys Ala Val Lys Pro Cys Gln | 95 | 100 | 105 |
| Ser Asp Glu Val Pro Asp Gly Ile Lys Ser Ala Ser Tyr Lys Tyr | 110 | 115 | 120 |
| Ser Glu Glu Ala Asn Asn Leu Ile Glu Glu Cys Glu Gln Ala Glu | 125 | 130 | 135 |
| Arg Leu Gly Ala Val Asp Glu Ser Leu Ser Glu Glu Thr Gln Lys | 140 | 145 | 150 |
| Ala Val Leu Gln Trp Thr Lys His Asp Asp Ser Ser Asp Asn Phe | 155 | 160 | 165 |
| Cys Glu Ala Asp Asp Ile Gln Ser Pro Glu Ala Glu Tyr Val Asp | 170 | 175 | 180 |
| Leu Leu Leu Asn Pro Glu Arg Tyr Thr Gly Tyr Lys Gly Pro Asp | 185 | 190 | 195 |
| Ala Trp Lys Ile Trp Asn Val Ile Tyr Glu Glu Asn Cys Phe Lys | 200 | 205 | 210 |
| Pro Gln Thr Ile Lys Arg Pro Leu Asn Pro Leu Ala Ser Gly Gln | 215 | 220 | 225 |
| Gly Thr Ser Glu Glu Asn Thr Phe Tyr Ser Trp Leu Glu Gly Leu | 230 | 235 | 240 |
| Cys Val Glu Lys Arg Ala Phe Tyr Arg Leu Ile Ser Gly Leu His | 245 | 250 | 255 |
| Ala Ser Ile Asn Val His Leu Ser Ala Arg Tyr Leu Leu Gln Glu | 260 | 265 | 270 |
| Thr Trp Leu Glu Lys Lys Trp Gly His Asn Ile Thr Glu Phe Gln | 275 | 280 | 285 |
| Gln Arg Phe Asp Gly Ile Leu Thr Glu Gly Glu Gly Pro Arg Arg | 290 | 295 | 300 |
| Leu Lys Asn Leu Tyr Phe Leu Tyr Leu Ile Glu Leu Arg Ala Leu | 305 | 310 | 315 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Lys | Val | Leu | Pro | Phe | Phe | Glu | Arg | Pro | Asp | Phe | Gln | Leu | Phe | 320 | 325 | 330 |
| Thr | Gly | Asn | Lys | Ile | Gln | Asp | Glu | Glu | Asn | Lys | Met | Leu | Leu | Leu | 335 | 340 | 345 |
| Glu | Ile | Leu | His | Glu | Ile | Lys | Ser | Phe | Pro | Leu | His | Phe | Asp | Glu | 350 | 355 | 360 |
| Asn | Ser | Phe | Phe | Ala | Gly | Asp | Lys | Lys | Glu | Ala | His | Lys | Leu | Lys | 365 | 370 | 375 |
| Glu | Asp | Phe | Arg | Leu | His | Phe | Arg | Asn | Ile | Ser | Arg | Ile | Met | Asp | 380 | 385 | 390 |
| Cys | Val | Gly | Cys | Phe | Lys | Cys | Arg | Leu | Trp | Gly | Lys | Leu | Gln | Thr | 395 | 400 | 405 |
| Gln | Gly | Leu | Gly | Thr | Ala | Leu | Lys | Ile | Leu | Phe | Ser | Glu | Lys | Leu | 410 | 415 | 420 |
| Ile | Ala | Asn | Met | Pro | Glu | Ser | Gly | Pro | Ser | Tyr | Glu | Phe | His | Leu | 425 | 430 | 435 |
| Thr | Arg | Gln | Glu | Ile | Val | Ser | Leu | Phe | Asn | Ala | Phe | Gly | Arg | Ile | 440 | 445 | 450 |
| Ser | Thr | Ser | Val | Lys | Glu | Leu | Glu | Asn | Phe | Arg | Asn | Leu | Leu | Gln | 455 | 460 | 465 |

Asn Ile His

<210> 338

<211> 507

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 101, 263, 376, 397, 426

<223> unknown base

<400> 338

gctggaaata tggatgtcat ctacgagaaa ctgttttaag ccacagacaa 50

ttaaaagacc tttaaactct ttggcttctg gtcaaggac aagtgaagag 100

nacacttttt acagttggct agaaggtctc tgtgtagaaa aaagagcatt 150

ctacagactt atatctggcc tacatgcaag cattaatgtg catttgagtg 200

caagatatct ttacaagag acctgggttag aaaagaaatg gggacacaac 250

attacagaat ttnaacagcg atttgatgga attttgactg aaggagaagg 300

tccaagaagg cttaagaact tgtattttct ctacttaata gaactaaggg 350

ctttatccaa agtggtacca ttcttngagc gcccagattt tcaactnttt 400
actggaaata aaattcagga tgaggnaaac aaaatgttac ttttggaaat 450
acttcatgaa atcaagtcac ttcttttgca ttttgatgag aattcatttt 500
tttgctg 507

<210> 339
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 339
aagctgccgg agctgcaatg 20

<210> 340
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 340
ttgcttctta atcctgagcg c 21

<210> 341
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 341
aaaggaggac tttcgactgc 20

<210> 342
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 342
agagattcat ccactgctcc aagtcg 26

<210> 343
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 343

tgtccagaaa caggcacata tcagc 25

<210> 344

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 344

agacagcggc acagagggtgc ttctgccagg ttagtggtta cttggatgat 50

<210> 345

<211> 1486

<212> DNA

<213> Homo sapiens

<400> 345

cggacgcgtg ggcggacgcg tgggcggacg cgtgggttgg gagggggcag 50
gatgggaggg aaagtgaaga aaacagaaaa ggagagggac agaggccaga 100
ggactttctca tactggacag aaaccgatca ggcatggaac tccccttcgt 150
cactcacctg ttcttgcccc tgggtgttct gacaggtctc tgctccccct 200
ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250
gaatttggat acagtgtctt acaacatgtt ggggggtggac agcgatggat 300
gctggtgggc gccccctggg atgggccttc aggcgaccgg aggggggacg 350
tttatcgctg ccctgtaggg ggggcccaca atgccccatg tgccaagggc 400
cacttaggtg actaccaact gggaaattca tctcatctg ctgtgaatat 450
gcacctgggg atgtctctgt tagagacaga tggatgatgg ggattcatgg 500
tgagctaagg agagggtggt ggcagtgtct ctgaagggtcc ataaaagaaa 550
aaagagaagt gtggaaggg aaaatggtct gtgtggaggg gtcaaggagt 600
taaaaaccct agaaagcaaa aggtaggtaa tgtcaggag tagtcttcat 650
gcctccttca actgggagca tgttctgagg gtgccctccc aagcctggga 700
gtaactatth ccccatccc caggcctgtg cccctctctg gtctcgtgct 750
tgtggcagct ctgtcttcag ttctgggata tgtgcccgtg tggatgcttc 800
attccagcct caggaagcc tggcaccac tgcccaacgt gagccagagg 850

aaggctgagt acttggttcc cagaaggaga tactgggtgg gaaaaagatg 900
gggcaaagcg gtatgatgcc tggcaaaggg cctgcatggc taccctcatt 950
gctacctaata gtgcttgcaa aagctccatg tttcctaaca gattcaagact 1000
cctggccagg tgtggtggcc cacacctgta attctagcac tttgggaggc 1050
caagggtgggc agatcacttg aggtcaggag ttcaagacca gcctggccaa 1100
catggtgaaa ctccatctct actaaaaaaa aaaaaatata aaaattagct 1150
gggtgcgcta gtgcatgcct gtaatctcat ctactcgga ggctaagaca 1200
ggagactctc acttcaaccc aggaggtgga ggttgcggtg agccaagatt 1250
gtgcctctgc actctagcgt gggtgacaga gtaagcgaga ctccatctca 1300
aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350
gcctggcaca gtaactcatg cctgtaatcc caacattttg ggaggccaac 1400
gcaggaggat tgcttgaggt ctggaggttt gagaccagcc tgggcaacat 1450
agaaagaccc catctctaaa taaatgtttt aaaaat 1486

<210> 346
<211> 124
<212> PRT
<213> Homo sapiens

<400> 346
Met Glu Leu Pro Phe Val Thr His Leu Phe Leu Pro Leu Val Phe
1 5 10 15
Leu Thr Gly Leu Cys Ser Pro Phe Asn Leu Asp Glu His His Pro
20 25 30
Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly Tyr Ser Val
35 40 45
Leu Gln His Val Gly Gly Gly Gln Arg Trp Met Leu Val Gly Ala
50 55 60
Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr Arg
65 70 75
Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His
80 85 90
Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn
95 100 105
Met His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly
110 115 120

Phe Met Val Ser

<210> 347

<211> 509

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 22

<223> unknown base

<400> 347

cacagttccc caccatcact cntcccatc cttccaactt tatttttagc 50
ttgccattgg gagggggcag gatgggaggg aaagtgaaga aaacagaaaa 100
ggagagggac agaggccaga ggacttctca tactggacag aaaccgatca 150
ggcatggaac tccccttcgt cactcacctg ttcttgcccc tgggtgttcct 200
gacaggtctc tgctccccct ttaacctgga tgaacatcac ccacgcctat 250
tcccagggcc accagaagct gaatttggat acagtgtctt acaacatgtt 300
gggggtggac agcgatggat gctggtgggc gccccctggg atgggccttc 350
aggcgaccgg aggggggacg tttatcgctg ccctgtaggg gggggccaca 400
atgccccatg tgccaagggc cacttaggtg actaccaact gggaaattca 450
tctcatcctg ctgtgaatat gcacctgggg atgtctctgt tagagacaga 500
tggtgatgg 509

<210> 348

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 348

agggacagag gccagaggac ttc 23

<210> 349

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 349

caggtgcata ttcacagcag gatg 24

<210> 350
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 350
ggaactcccc ttcgtcactc acctgttctt gcccctgggtg ttcct 45

<210> 351
<211> 2056
<212> DNA
<213> Homo sapiens

<400> 351
aaagttacat tttctctgga actctcctag gccactccct gctgatgcaa 50
catctggggtt tgggcagaaa ggagggtgct tcggagcccg ccctttctga 100
gcttcctggg ccggctctag aacaattcag gcttcgctgc gactcagacc 150
tcagctccaa catatgcatt ctgaagaaag atggctgaga tggacagaat 200
gctttatttt ggaaagaaac aatgttctag gtcaaactga gtctaccaa 250
tgcagacttt cacaatgggt ctagaagaaa tctggacaag tcttttcatg 300
tggtttttct acgcattgat tccatgtttg ctcacagatg aagtggccat 350
tctgcctgcc cctcagaacc tctctgtact ctcaaccaac atgaagcatc 400
tcttgatgtg gagcccagtg atcgcgcctg gagaaacagt gtactattct 450
gtcgaatacc agggggagta cgagagcctg tacacgagcc acatctggat 500
ccccagcagc tgggtgctcac tcaactgaagg tcctgagtgt gatgtcactg 550
atgacatcac ggccactgtg ccatacaacc ttcgtgtcag ggccacattg 600
ggctcacaga cctcagcctg gagcatcctg aagcatccct ttaatagaaa 650
ctcaaccatc cttacccgac ctgggatgga gatcaccaa gatggcttcc 700
acctgggttat tgagctggag gacctggggc ccagtttga gttccttgtg 750
gcctactgga ggaggagcc tggtgccgag gaacatgtca aaatgggtgag 800
gagtgggggt attccagtgc acctagaaac catggagcca ggggctgcat 850
actgtgtgaa ggcccagaca ttcgtgaagg ccattgggag gtacagcgcc 900
ttcagccaga cagaatgtgt ggagggtgcaa ggagaggcca ttcccctggt 950
actggccctg ttgaccttg ttggcttcat gctgatcctt gtggtcgtgc 1000

cactgttcgt ctggaaaatg ggccggctgc tccagtactc ctgttgcccc 1050
 gtgggtgtcc tcccagacac cttgaaaata accaattcac cccagaagtt 1100
 aatcagctgc agaagggagg aggtggatgc ctgtgccacg gctgtgatgt 1150
 ctctgagga actcctcagg gcctggatct cataggtttg cggaagggcc 1200
 caggtgaagc cgagaacctg gtctgcatga catggaaacc atgaggggac 1250
 aagttgtgtt tctgttttcc gccacggaca agggatgaga gaagtaggaa 1300
 gagcctgttg tctacaagtc tagaagcaac catcagaggc aggggtgttt 1350
 gtctaacaga aactgactg aggcttaggg gatgtgacct ctagactggg 1400
 ggctgccact tgctggctga gcaaccctgg gaaaagtgc ttcacccctt 1450
 cggtcctaag ttttctcctc tgtaatgggg gaattacctc cacacctgct 1500
 aaacacacac acacagagtc tctctctata tatacacacg tacacataaa 1550
 tacaccagc acttgcaagg ctagagggaa actggtgaca ctctacagtc 1600
 tgactgattc agtgtttctg gagagcagga cataaatgta tgatgagaat 1650
 gatcaaggac tctacacact ggggtggcttg gagagcccac tttcccagaa 1700
 taatccttga gagaaaagga atcatgggag caatgggtgt gagttcactt 1750
 caagcccaat gccgggtgcag aggggaatgg cttagcgagc tctacagtag 1800
 gtgacctgga ggaaggtcac agccacactg aaaatgggat gtgcatgaac 1850
 acggaggatc catgaactac tgtaaagtgt tgacagtgtg tgcacactgc 1900
 agacagcagg tgaaatgtat gtgtgcaatg cgacgagaat gcagaagtca 1950
 gtaacatgtg catgtttgtt gtgtccttt tttctgttgg taaagtacag 2000
 aattcagcaa ataaaaagg ccaccctggc caaaagcggg aaaaaaaaaa 2050
 aaaaaa 2056

<210> 352

<211> 311

<212> PRT

<213> Homo sapiens

<400> 352

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Thr | Phe | Thr | Met | Val | Leu | Glu | Glu | Ile | Trp | Thr | Ser | Leu |
| 1 | | | | | 5 | | | | | 10 | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Met | Trp | Phe | Phe | Tyr | Ala | Leu | Ile | Pro | Cys | Leu | Leu | Thr | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | |
|---|-----|-----|-----|
| Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser | 35 | 40 | 45 |
| Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro | 50 | 55 | 60 |
| Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu | 65 | 70 | 75 |
| Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser | 80 | 85 | 90 |
| Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala | 95 | 100 | 105 |
| Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln | 110 | 115 | 120 |
| Thr Ser Ala Trp Ser Ile Leu Lys His Pro Phe Asn Arg Asn Ser | 125 | 130 | 135 |
| Thr Ile Leu Thr Arg Pro Gly Met Glu Ile Thr Lys Asp Gly Phe | 140 | 145 | 150 |
| His Leu Val Ile Glu Leu Glu Asp Leu Gly Pro Gln Phe Glu Phe | 155 | 160 | 165 |
| Leu Val Ala Tyr Trp Arg Arg Glu Pro Gly Ala Glu Glu His Val | 170 | 175 | 180 |
| Lys Met Val Arg Ser Gly Gly Ile Pro Val His Leu Glu Thr Met | 185 | 190 | 195 |
| Glu Pro Gly Ala Ala Tyr Cys Val Lys Ala Gln Thr Phe Val Lys | 200 | 205 | 210 |
| Ala Ile Gly Arg Tyr Ser Ala Phe Ser Gln Thr Glu Cys Val Glu | 215 | 220 | 225 |
| Val Gln Gly Glu Ala Ile Pro Leu Val Leu Ala Leu Phe Ala Phe | 230 | 235 | 240 |
| Val Gly Phe Met Leu Ile Leu Val Val Val Pro Leu Phe Val Trp | 245 | 250 | 255 |
| Lys Met Gly Arg Leu Leu Gln Tyr Ser Cys Cys Pro Val Val Val | 260 | 265 | 270 |
| Leu Pro Asp Thr Leu Lys Ile Thr Asn Ser Pro Gln Lys Leu Ile | 275 | 280 | 285 |
| Ser Cys Arg Arg Glu Glu Val Asp Ala Cys Ala Thr Ala Val Met | 290 | 295 | 300 |
| Ser Pro Glu Glu Leu Leu Arg Ala Trp Ile Ser | 305 | 310 | |

<210> 353
<211> 864
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 654, 711, 748, 827
<223> unknown base

<400> 353
tcctgctgat gcacatctgg gtttggcaaa aggaggttgc ttcgagccgc 50
cctttctagc ttcttgcccg gctctagaac aattcaggct tcgctgcgac 100
tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150
agaatgcttt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200
ccaaatgcag actttcacia tggttctaga agaaatctgg acaagtcttt 250
tcatgtgggt tttctacgca ttgattccat gtttgctcac agatgaagtg 300
gccattctgc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350
gcatctcttg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400
attctgtcga ataccagggg gactacgaga gcctgtacac gagccacatc 450
tggtatccca gcagctgggt ctactcact gaaggtcctg agtgtgatgt 500
cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggcca 550
cattgggctc acagacctca gcctggagca tcctgaagca tccctttaat 600
agaaactcaa ccacacctac ccgacctggg atggagatca ccaaagatgg 650
cttncacctg gttattgagc tggaggacct ggggccccag tttgagttcc 700
ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750
gaaccocctt cgcccgctgg ggtatctctc gagaaaagag aggcccaata 800
tgaccacat actcaatatg gacgaantgc tattgtccac ctgtttgagt 850
ggcgctgggt tgat 864

<210> 354
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 354
aggcttcgct gcgactagac ctc 23

<210> 355
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 355
ccaggtcggg taaggatggt tgag 24

<210> 356
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 356
tttctacgca ttgattccat gtttgctcac agatgaagtg gccattctgc 50

<210> 357
<211> 1670
<212> DNA
<213> Homo sapiens

<400> 357
cccacgcgtc cgcccacgcg tccgagggac aagagagaag agagactgaa 50
acagggagaa gaggcaggag aggaggaggt ggggagagca cgaagctgga 100
ggccgacact gagggagggc gggaggaggt gaagaaggag agaggggaga 150
agaggcagga gctggaaagg agagagggag gaggaggagg agatgcggga 200
tgagacctg gagttaggtg gcttgggaga gcttaatgaa aagagaacgg 250
agaggaggtg tgggttagga accaagaggt agccctgtgg gcagcagaag 300
gctgagagga gtaggaagat caggagctag agggagactg gagggttccg 350
ggaaaagagc agaggaaaga ggaaagacac agagagacgg gagagagaag 400
aagagtgggt ttgaagggcg gatctcagtc cctggctgct ttggcatttg 450
gggaactggg actccctgtg gggaggagag gaaagctgga agtcctggag 500
ggacagggtc ccagaaggag gggacagagg agctgagaga ggggggcagg 550
gcgttgggca ggggtccctc ggaggcctcc tggggatggg ggctgcagct 600
cgtctgagcg cccctcgagc gctgggtactc tgggctgcac tgggggcagc 650
agctcacatc ggaccagcac ctgaccccca ggactggtgg agctacaagg 700

ataatctcca gggaaacttc gtgccagggc ctcctttctg gggcctggtg 750
 aatgcagcgt ggagtctgtg tgctgtgggg aagcggcaga gccccgtgga 800
 tgtggagctg aagaggggtc tttatgaccc ctttctgccc ccattaaggc 850
 tcagcactgg aggagagaag ctccggggaa ccttgtacaa caccggccga 900
 catgtctcct tcctgcctgc accccgacct gtggtcaatg tgtctggagg 950
 tccccctctt tacagccacc gactcagtga actgcggtcg ctgtttggag 1000
 ctgcgcagcg agccggctcg gaacatcaga tcaaccacca gggcttctct 1050
 gctgaggtgc agctcattca cttcaaccag gaactctacg ggaatttcag 1100
 cgctgcctcc cgcggcccca atggcctggc cattctcagc ctctttgtca 1150
 acgttgccag tacctctaac ccattcctca gtcgcctcct taaccgcgac 1200
 accatcactc gcatctccta caagaatgat gcctactttc ttcaagacct 1250
 gagcctggag ctctgtttcc ctgaatcctt cggcttcac acctatcagg 1300
 gctctctcag caccocgccc tgctccgaga ctgtcacctg gatcctcatt 1350
 gaccggggccc tcaatatcac ctcccttcag atgcactccc tgagactcct 1400
 gagccagaat cctccatctc agatcttcca gagcctcagc ggtaacagcc 1450
 gggccctgca gcccttggcc cacagggcac tgagggggcaa cagggacccc 1500
 cggcaccocg agaggcgctg ccgaggcccc aactaccgcc tgcattgtgga 1550
 tgggtgtcccc catggtcgct gagactcccc ttcgaggatt gcacccgccc 1600
 gtccctaagcc tccccacaag gcgaggggag ttacccttaa aacaaagcta 1650
 ttaaagggac agaatactta 1670

<210> 358
 <211> 328
 <212> PRT
 <213> Homo sapiens

<400> 358

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Ala | Ala | Arg | Leu | Ser | Ala | Pro | Arg | Ala | Leu | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ala | Ala | Leu | Gly | Ala | Ala | Ala | His | Ile | Gly | Pro | Ala | Pro | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Asp | Trp | Trp | Ser | Tyr | Lys | Asp | Asn | Leu | Gln | Gly | Asn | Phe |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Gly | Pro | Pro | Phe | Trp | Gly | Leu | Val | Asn | Ala | Ala | Trp | Ser |
| | | | | | 50 | | | | 55 | | | | | 60 |

| | | | |
|---|-----|-----|-----|
| Leu Cys Ala Val Gly Lys Arg Gln Ser Pro Val Asp Val Glu Leu | 65 | 70 | 75 |
| Lys Arg Val Leu Tyr Asp Pro Phe Leu Pro Pro Leu Arg Leu Ser | 80 | 85 | 90 |
| Thr Gly Gly Glu Lys Leu Arg Gly Thr Leu Tyr Asn Thr Gly Arg | 95 | 100 | 105 |
| His Val Ser Phe Leu Pro Ala Pro Arg Pro Val Val Asn Val Ser | 110 | 115 | 120 |
| Gly Gly Pro Leu Leu Tyr Ser His Arg Leu Ser Glu Leu Arg Leu | 125 | 130 | 135 |
| Leu Phe Gly Ala Arg Asp Gly Ala Gly Ser Glu His Gln Ile Asn | 140 | 145 | 150 |
| His Gln Gly Phe Ser Ala Glu Val Gln Leu Ile His Phe Asn Gln | 155 | 160 | 165 |
| Glu Leu Tyr Gly Asn Phe Ser Ala Ala Ser Arg Gly Pro Asn Gly | 170 | 175 | 180 |
| Leu Ala Ile Leu Ser Leu Phe Val Asn Val Ala Ser Thr Ser Asn | 185 | 190 | 195 |
| Pro Phe Leu Ser Arg Leu Leu Asn Arg Asp Thr Ile Thr Arg Ile | 200 | 205 | 210 |
| Ser Tyr Lys Asn Asp Ala Tyr Phe Leu Gln Asp Leu Ser Leu Glu | 215 | 220 | 225 |
| Leu Leu Phe Pro Glu Ser Phe Gly Phe Ile Thr Tyr Gln Gly Ser | 230 | 235 | 240 |
| Leu Ser Thr Pro Pro Cys Ser Glu Thr Val Thr Trp Ile Leu Ile | 245 | 250 | 255 |
| Asp Arg Ala Leu Asn Ile Thr Ser Leu Gln Met His Ser Leu Arg | 260 | 265 | 270 |
| Leu Leu Ser Gln Asn Pro Pro Ser Gln Ile Phe Gln Ser Leu Ser | 275 | 280 | 285 |
| Gly Asn Ser Arg Pro Leu Gln Pro Leu Ala His Arg Ala Leu Arg | 290 | 295 | 300 |
| Gly Asn Arg Asp Pro Arg His Pro Glu Arg Arg Cys Arg Gly Pro | 305 | 310 | 315 |
| Asn Tyr Arg Leu His Val Asp Gly Val Pro His Gly Arg | 320 | 325 | |

<210> 359

<211> 24

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 359
tctgctgagg tgcagctcat tcac 24

<210> 360
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 360
gaggctctgg aagatctgag atgg 24

<210> 361
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 361
gcctctttgt caacgttgcc agtacctcta acccattcct cagtcgcctc 50

<210> 362
<211> 3038
<212> DNA
<213> Homo sapiens

<400> 362
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gcagctactg ctcagaaacg ctggggcgcc caccctggca gactaacgaa 150
gcagctccct tcccaccca actgcaggtc taattttgga cgctttgcct 200
gccatttctt ccagggtgag ggagccgcag aggcggaggc tcgcgtattc 250
ctgcagtcag caccacgtc gccccggac gctcggtgct caggcccttc 300
gcgagcgggg ctctccgtct gcggtccctt gtgaaggctc tgggcggctg 350
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aaccacagtg ctgttcacatg ctagagcaat tccagccatg gtggttccca 550
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 actattccaa atgcaatatt tctgaatttt gtataaaact gtaacattac 2050
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 gttctacggt tcatatatta tatggtgctt tgttatatgcc actaataaaa 2300
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 attaccattg ccaactgattt tttttaaatg gttaaagacc ttgtatataa 2850
 atattgccat atcatggtac ctataatggt gatatatattg tttctatgaa 2900
 aaatgtattg tgctttgata ctaaaaatct gtaaaatggt agttttggta 2950
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 taaacattaa aattaatcat gtttcaaaaa aaaaaaaaa 3038

<210> 363

<211> 500

<212> PRT

<213> Homo sapiens

<400> 363

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Cys | Thr | Ala | Arg | Glu | Trp | Leu | Arg | Val | Thr | Thr | Val | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Met | Ala | Arg | Ala | Ile | Pro | Ala | Met | Val | Val | Pro | Asn | Ala | Thr |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|
| Leu | Leu | Glu | Lys | Leu | Leu | Glu | Lys | Tyr | Met | Asp | Glu | Asp | Gly | Glu | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | |
| Trp | Trp | Ile | Ala | Lys | Gln | Arg | Gly | Lys | Arg | Ala | Ile | Thr | Asp | Asn | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | |
| Asp | Met | Gln | Ser | Ile | Leu | Asp | Leu | His | Asn | Lys | Leu | Arg | Ser | Gln | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | |
| Val | Tyr | Pro | Thr | Ala | Ser | Asn | Met | Glu | Tyr | Met | Thr | Trp | Asp | Val | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | |
| Glu | Leu | Glu | Arg | Ser | Ala | Glu | Ser | Trp | Ala | Glu | Ser | Cys | Leu | Trp | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | |
| Glu | His | Gly | Pro | Ala | Ser | Leu | Leu | Pro | Ser | Ile | Gly | Gln | Asn | Leu | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | |
| Gly | Ala | His | Trp | Gly | Arg | Tyr | Arg | Pro | Pro | Thr | Phe | His | Val | Gln | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | |
| Ser | Trp | Tyr | Asp | Glu | Val | Lys | Asp | Phe | Ser | Tyr | Pro | Tyr | Glu | His | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | |
| Glu | Cys | Asn | Pro | Tyr | Cys | Pro | Phe | Arg | Cys | Ser | Gly | Pro | Val | Cys | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | |
| Thr | His | Tyr | Thr | Gln | Val | Val | Trp | Ala | Thr | Ser | Asn | Arg | Ile | Gly | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | |
| Cys | Ala | Ile | Asn | Leu | Cys | His | Asn | Met | Asn | Ile | Trp | Gly | Gln | Ile | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | |
| Trp | Pro | Lys | Ala | Val | Tyr | Leu | Val | Cys | Asn | Tyr | Ser | Pro | Lys | Gly | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | |
| Asn | Trp | Trp | Gly | His | Ala | Pro | Tyr | Lys | His | Gly | Arg | Pro | Cys | Ser | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | |
| Ala | Cys | Pro | Pro | Ser | Phe | Gly | Gly | Gly | Cys | Arg | Glu | Asn | Leu | Cys | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | |
| Tyr | Lys | Glu | Gly | Ser | Asp | Arg | Tyr | Tyr | Pro | Pro | Arg | Glu | Glu | Glu | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | |
| Thr | Asn | Glu | Ile | Glu | Arg | Gln | Gln | Ser | Gln | Val | His | Asp | Thr | His | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | |
| Val | Arg | Thr | Arg | Ser | Asp | Asp | Ser | Ser | Arg | Asn | Glu | Val | Ile | Ser | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | |
| Ala | Gln | Gln | Met | Ser | Gln | Ile | Val | Ser | Cys | Glu | Val | Arg | Leu | Arg | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | |
| Asp | Gln | Cys | Lys | Gly | Thr | Thr | Cys | Asn | Arg | Tyr | Glu | Cys | Pro | Ala | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | |

| | |
|---|-------------------------|
| Gly Cys Leu Asp Ser Lys Ala Lys Val | Ile Gly Ser Val His Tyr |
| 320 | 325 330 |
| Glu Met Gln Ser Ser Ile Cys Arg Ala Ala | Ile His Tyr Gly Ile |
| 335 | 340 345 |
| Ile Asp Asn Asp Gly Gly Trp Val Asp | Ile Thr Arg Gln Gly Arg |
| 350 | 355 360 |
| Lys His Tyr Phe Ile Lys Ser Asn Arg | Asn Gly Ile Gln Thr Ile |
| 365 | 370 375 |
| Gly Lys Tyr Gln Ser Ala Asn Ser Phe | Thr Val Ser Lys Val Thr |
| 380 | 385 390 |
| Val Gln Ala Val Thr Cys Glu Thr Thr | Val Glu Gln Leu Cys Pro |
| 395 | 400 405 |
| Phe His Lys Pro Ala Ser His Cys Pro | Arg Val Tyr Cys Pro Arg |
| 410 | 415 420 |
| Asn Cys Met Gln Ala Asn Pro His Tyr | Ala Arg Val Ile Gly Thr |
| 425 | 430 435 |
| Arg Val Tyr Ser Asp Leu Ser Ser Ile | Cys Arg Ala Ala Val His |
| 440 | 445 450 |
| Ala Gly Val Val Arg Asn His Gly Gly | Tyr Val Asp Val Met Pro |
| 455 | 460 465 |
| Val Asp Lys Arg Lys Thr Tyr Ile Ala | Ser Phe Gln Asn Gly Ile |
| 470 | 475 480 |
| Phe Ser Glu Ser Leu Gln Asn Pro Pro | Gly Gly Lys Ala Phe Arg |
| 485 | 490 495 |
| Val Phe Ala Val Val | |
| 500 | |

<210> 364

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 364

ggacagaatt tgggagcaca ctgg 24

<210> 365

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 365
ccaagagtat actgtcctcg 20

<210> 366
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 366
agcacagatt ttctctacag ccccc 25

<210> 367
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 367
aaccactcca gcatgtactg ctgc 24

<210> 368
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 368
ccattcaggt gttctggccc tgtatgtaca cattatacac aggtcgtgtg 50

<210> 369
<211> 1685
<212> DNA
<213> Homo sapiens

<400> 369
gcggagacaa gcgcagagcg cagcgcacgg ccacagacag ccctgggcat 50
ccaccgacgg cgcagccgga gccagcagag ccggaaggcg cgccccgggc 100
agagaaagcc gagcagagct ggggtggcgtc tccgggcccgc cgctccgacg 150
ggccagcgcc ctccccatgt cctgtctccc acgccgcgcc cctccgggtca 200
gcatgaggct cctggcgggc gcgctgtctc tgetgtgtgt ggcgtgtac 250
accgcgcgtg tggacgggtc caaatgcaag tgctcccgga agggacccaa 300
gatccgctac agcgacgtga agaagctgga aatgaagcca aagtaccgc 350

actgcgagga gaagatgggtt atcatcacca ccaagagcgt gtccaggtac 400
cgagggtcagg agcactgcct gcacccaag ctgcagagca ccaagcgctt 450
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agggtgaaaa acctcagaag ggaaaaactcc aaaccagttg ggagacttgt 550
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aaaaaaaaaa aaagcctttc tttctcacag gcataagaca caaattatat 650
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cagtgttgct ccattcctag cttgggaagc ttccgcttag aggtcctggc 950
gcctcggcac agctgccacg ggctctcctg ggcttatggc cggtcacagc 1000
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gaacatgcag tactaaagca atatatttgt gattcccat gtaattcttc 1450
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cagtatatgc cgcattgtac tgctgtgtta tatgctatgt acatgtcaga 1600
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ataaaatata tttgaaatgt aaaaaaaaaa aaaaaa 1685

<210> 370

<211> 111

<212> PRT

<213> Homo sapiens

<400> 370

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Leu | Leu | Pro | Arg | Arg | Ala | Pro | Pro | Val | Ser | Met | Arg | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Ala | Ala | Leu | Leu | Leu | Leu | Leu | Ala | Leu | Tyr | Thr | Ala |
| | | | | 20 | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Val | Asp | Gly | Ser | Lys | Cys | Lys | Cys | Ser | Arg | Lys | Gly | Pro | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Arg | Tyr | Ser | Asp | Val | Lys | Lys | Leu | Glu | Met | Lys | Pro | Lys | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | His | Cys | Glu | Glu | Lys | Met | Val | Ile | Ile | Thr | Thr | Lys | Ser | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Tyr | Arg | Gly | Gln | Glu | His | Cys | Leu | His | Pro | Lys | Leu | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Thr | Lys | Arg | Phe | Ile | Lys | Trp | Tyr | Asn | Ala | Trp | Asn | Glu | Lys |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | |
|-----|-----|-----|-----|-----|-----|
| Arg | Arg | Val | Tyr | Glu | Glu |
| | | | | 110 | |

<210> 371

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 371

cagcgccctc cccatgtccc tg 22

<210> 372

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 372

tcccaactgg tttggagttt tccc 24

<210> 373

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 373
ctccggtcag catgaggctc ctggcgccg ctgctcctgc tgctg 45

<210> 374
<211> 3113
<212> DNA
<213> Homo sapiens

<400> 374
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tgttaaactc caatgtcctc ctgtgggttaa ctgctcttgc catcaagttc 100
acctcattg acagccaagc acagtatcca gttgtcaaca caaattatgg 150
caaaatccgg ggcctaagaa caccgttacc caatgagatc ttgggtccag 200
tggagcagta cttaggggtc ccctatgcct cccccccac tggagagagg 250
cggtttcagc cccagaacc cccgtcctcc tggactggca tccgaaatac 300
tactcagttt gctgctgtgt gccccagca cctggatgag agatccttac 350
tgcatgacat gctgcccac tggtttaccg ccaatttga tactttgatg 400
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gtaatgaccg tggatgaagac gaagatatc atgatcagaa cagtaagaag 550
cccgtcatgg tctatatcca tgggggatct tacatggagg gcaccggcaa 600
catgattgac ggcagcattt tggcaagcta cggaacgtc atcgtgatca 650
ccattaacta ccgtctggga atactaggtt ttttaagtac cggtgaccag 700
gcagcaaaag gcaactatgg gctcctggat cagattcaag cactgcggtg 750
gattgaggag aatgtgggag cctttggcgg ggacccaag agagtgaaca 800
tctttggctc gggggctggg gcctcctgtg tcagcctgtt gaccctgtcc 850
cactactcag aaggtctctt ccagaaggcc atcattcaga gcggcaccgc 900
cctgtccagc tgggcagtga actaccagcc ggccaagtac actcgatat 950
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cagacgaccc ccagatcctg atggagcaag gcgagttcct caactacgac 1150
atcatgctgg gcgtcaacca aggggaaggc ctgaagtctg tggacggcat 1200

cgtggataac gaggacggtg tgacgccccaa cgactttgac ttctccgtgt 1250
ccaacttcgt ggacaacctt tacggctacc ctgaaggga agacactttg 1300
cgggagacta tcaagttcat gtacacagac tgggccgata aggaaaaccc 1350
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tggcccccgc cgtggccgcc gacctgcacg cgcagtacgg ctccccacc 1450
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atgacatcat ttccctatgg caccggcgga tctcccgcca agatatggcc 1950
aaccaccaa cgcccagcaa tcaactctgc caacaatccc aaacactcta 2000
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<210> 375
 <211> 816
 <212> PRT
 <213> Homo sapiens

<400> 375

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Asn | Ser | Asn | Val | Leu | Leu | Trp | Leu | Thr | Ala | Leu | Ala | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Lys | Phe | Thr | Leu | Ile | Asp | Ser | Gln | Ala | Gln | Tyr | Pro | Val | Val | Asn |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Asn | Tyr | Gly | Lys | Ile | Arg | Gly | Leu | Arg | Thr | Pro | Leu | Pro | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Ile | Leu | Gly | Pro | Val | Glu | Gln | Tyr | Leu | Gly | Val | Pro | Tyr | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Pro | Pro | Thr | Gly | Glu | Arg | Arg | Phe | Gln | Pro | Pro | Glu | Pro | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Ser | Trp | Thr | Gly | Ile | Arg | Asn | Thr | Thr | Gln | Phe | Ala | Ala | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Cys | Pro | Gln | His | Leu | Asp | Glu | Arg | Ser | Leu | Leu | His | Asp | Met | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Pro | Ile | Trp | Phe | Thr | Ala | Asn | Leu | Asp | Thr | Leu | Met | Thr | Tyr | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gln | Asp | Gln | Asn | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Ile | Tyr | Val | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Glu | Asp | Gly | Ala | Asn | Thr | Lys | Lys | Asn | Ala | Asp | Asp | Ile | Thr |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | |
|---|-----|-----|-----|
| Ser Asn Asp Arg Gly Glu Asp Glu Asp Ile His Asp Gln Asn Ser | 155 | 160 | 165 |
| Lys Lys Pro Val Met Val Tyr Ile His Gly Gly Ser Tyr Met Glu | 170 | 175 | 180 |
| Gly Thr Gly Asn Met Ile Asp Gly Ser Ile Leu Ala Ser Tyr Gly | 185 | 190 | 195 |
| Asn Val Ile Val Ile Thr Ile Asn Tyr Arg Leu Gly Ile Leu Gly | 200 | 205 | 210 |
| Phe Leu Ser Thr Gly Asp Gln Ala Ala Lys Gly Asn Tyr Gly Leu | 215 | 220 | 225 |
| Leu Asp Gln Ile Gln Ala Leu Arg Trp Ile Glu Glu Asn Val Gly | 230 | 235 | 240 |
| Ala Phe Gly Gly Asp Pro Lys Arg Val Thr Ile Phe Gly Ser Gly | 245 | 250 | 255 |
| Ala Gly Ala Ser Cys Val Ser Leu Leu Thr Leu Ser His Tyr Ser | 260 | 265 | 270 |
| Glu Gly Leu Phe Gln Lys Ala Ile Ile Gln Ser Gly Thr Ala Leu | 275 | 280 | 285 |
| Ser Ser Trp Ala Val Asn Tyr Gln Pro Ala Lys Tyr Thr Arg Ile | 290 | 295 | 300 |
| Leu Ala Asp Lys Val Gly Cys Asn Met Leu Asp Thr Thr Asp Met | 305 | 310 | 315 |
| Val Glu Cys Leu Arg Asn Lys Asn Tyr Lys Glu Leu Ile Gln Gln | 320 | 325 | 330 |
| Thr Ile Thr Pro Ala Thr Tyr His Ile Ala Phe Gly Pro Val Ile | 335 | 340 | 345 |
| Asp Gly Asp Val Ile Pro Asp Asp Pro Gln Ile Leu Met Glu Gln | 350 | 355 | 360 |
| Gly Glu Phe Leu Asn Tyr Asp Ile Met Leu Gly Val Asn Gln Gly | 365 | 370 | 375 |
| Glu Gly Leu Lys Phe Val Asp Gly Ile Val Asp Asn Glu Asp Gly | 380 | 385 | 390 |
| Val Thr Pro Asn Asp Phe Asp Phe Ser Val Ser Asn Phe Val Asp | 395 | 400 | 405 |
| Asn Leu Tyr Gly Tyr Pro Glu Gly Lys Asp Thr Leu Arg Glu Thr | 410 | 415 | 420 |
| Ile Lys Phe Met Tyr Thr Asp Trp Ala Asp Lys Glu Asn Pro Glu | 425 | 430 | 435 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Thr Arg Arg Lys | Thr Leu Val Ala Leu | Phe Thr Asp His Gln Trp | 440 | 445 | 450 |
| Val Ala Pro Ala | Val Ala Ala Asp Leu | His Ala Gln Tyr Gly Ser | 455 | 460 | 465 |
| Pro Thr Tyr Phe | Tyr Ala Phe Tyr His | His Cys Gln Ser Glu Met | 470 | 475 | 480 |
| Lys Pro Ser Trp | Ala Asp Ser Ala His | Gly Asp Glu Val Pro Tyr | 485 | 490 | 495 |
| Val Phe Gly Ile | Pro Met Ile Gly Pro | Thr Glu Leu Phe Ser Cys | 500 | 505 | 510 |
| Asn Phe Ser Lys | Asn Asp Val Met Leu | Ser Ala Val Val Met Thr | 515 | 520 | 525 |
| Tyr Trp Thr Asn | Phe Ala Lys Thr Gly | Asp Pro Asn Gln Pro Val | 530 | 535 | 540 |
| Pro Gln Asp Thr | Lys Phe Ile His Thr | Lys Pro Asn Arg Phe Glu | 545 | 550 | 555 |
| Glu Val Ala Trp | Ser Lys Tyr Asn Pro | Lys Asp Gln Leu Tyr Leu | 560 | 565 | 570 |
| His Ile Gly Leu | Lys Pro Arg Val Arg | Asp His Tyr Arg Ala Thr | 575 | 580 | 585 |
| Lys Val Ala Phe | Trp Leu Glu Leu Val | Pro His Leu His Asn Leu | 590 | 595 | 600 |
| Asn Glu Ile Phe | Gln Tyr Val Ser Thr | Thr Thr Lys Val Pro Pro | 605 | 610 | 615 |
| Pro Asp Met Thr | Ser Phe Pro Tyr Gly | Thr Arg Arg Ser Pro Ala | 620 | 625 | 630 |
| Lys Ile Trp Pro | Thr Thr Lys Arg Pro | Ala Ile Thr Pro Ala Asn | 635 | 640 | 645 |
| Asn Pro Lys His | Ser Lys Asp Pro His | Lys Thr Gly Pro Glu Asp | 650 | 655 | 660 |
| Thr Thr Val Leu | Ile Glu Thr Lys Arg | Asp Tyr Ser Thr Glu Leu | 665 | 670 | 675 |
| Ser Val Thr Ile | Ala Val Gly Ala Ser | Leu Leu Phe Leu Asn Ile | 680 | 685 | 690 |
| Leu Ala Phe Ala | Ala Leu Tyr Tyr Lys | Lys Asp Lys Arg Arg His | 695 | 700 | 705 |
| Glu Thr His Arg | Arg Pro Ser Pro Gln | Arg Asn Thr Thr Asn Asp | 710 | 715 | 720 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | His | Ile | Gln | Asn | Glu | Glu | Ile | Met | Ser | Leu | Gln | Met | Lys |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Gln | Leu | Glu | His | Asp | His | Glu | Cys | Glu | Ser | Leu | Gln | Ala | His | Asp |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Thr | Leu | Arg | Leu | Thr | Cys | Pro | Pro | Asp | Tyr | Thr | Leu | Thr | Leu | Arg |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Arg | Ser | Pro | Asp | Asp | Ile | Pro | Leu | Met | Thr | Pro | Asn | Thr | Ile | Thr |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Met | Ile | Pro | Asn | Thr | Leu | Thr | Gly | Met | Gln | Pro | Leu | His | Thr | Phe |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Asn | Thr | Phe | Ser | Gly | Gly | Gln | Asn | Ser | Thr | Asn | Leu | Pro | His | Gly |
| | | | | 800 | | | | | 805 | | | | | 810 |
| His | Ser | Thr | Thr | Arg | Val | | | | | | | | | |
| | | | | 815 | | | | | | | | | | |

<210> 376

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 376

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<210> 377

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 377

aacccccgag ccaaaagatg gtcac 25

<210> 378

<211> 47

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 378

gtaccggtga ccaggcagca aaaggcaact atgggctcct ggatcag 47

<210> 379

<211> 2461

<212> DNA

<213> Homo sapiens

<400> 379

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ttgttggggc ctgggcaggg gccacagcaa gtcggggcgg gtcaaacgtt 150
cgagtacttg aaacgggagc actcgtctgc gaagccctac cagggtgtgg 200
gcacaggcag ttcctcactg tggaatctga tgggcaatgc catggtgatg 250
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<210> 380

<211> 348

<212> PRT

<213> Homo sapiens

<400> 380

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Thr | Leu | Gly | Pro | Leu | Gly | Ser | Trp | Gln | Gln | Trp | Arg |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Leu | Ser | Ala | Arg | Asp | Gly | Ser | Arg | Met | Leu | Leu | Leu | Leu |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|-----|-----|-----|
| Leu | Leu | Leu | Gly | Ser | Gly | Gln | Gly | Pro | Gln | Gln | Val | Gly | Ala | Gly | | | | 35 | 40 | 45 |
| Gln | Thr | Phe | Glu | Tyr | Leu | Lys | Arg | Glu | His | Ser | Leu | Ser | Lys | Pro | | | | 50 | 55 | 60 |
| Tyr | Gln | Gly | Val | Gly | Thr | Gly | Ser | Ser | Ser | Leu | Trp | Asn | Leu | Met | | | | 65 | 70 | 75 |
| Gly | Asn | Ala | Met | Val | Met | Thr | Gln | Tyr | Ile | Arg | Leu | Thr | Pro | Asp | | | | 80 | 85 | 90 |
| Met | Gln | Ser | Lys | Gln | Gly | Ala | Leu | Trp | Asn | Arg | Val | Pro | Cys | Phe | | | | 95 | 100 | 105 |
| Leu | Arg | Asp | Trp | Glu | Leu | Gln | Val | His | Phe | Lys | Ile | His | Gly | Gln | | | | 110 | 115 | 120 |
| Gly | Lys | Lys | Asn | Leu | His | Gly | Asp | Gly | Leu | Ala | Ile | Trp | Tyr | Thr | | | | 125 | 130 | 135 |
| Lys | Asp | Arg | Met | Gln | Pro | Gly | Pro | Val | Phe | Gly | Asn | Met | Asp | Lys | | | | 140 | 145 | 150 |
| Phe | Val | Gly | Leu | Gly | Val | Phe | Val | Asp | Thr | Tyr | Pro | Asn | Glu | Glu | | | | 155 | 160 | 165 |
| Lys | Gln | Gln | Glu | Arg | Val | Phe | Pro | Tyr | Ile | Ser | Ala | Met | Val | Asn | | | | 170 | 175 | 180 |
| Asn | Gly | Ser | Leu | Ser | Tyr | Asp | His | Glu | Arg | Asp | Gly | Arg | Pro | Thr | | | | 185 | 190 | 195 |
| Glu | Leu | Gly | Gly | Cys | Thr | Ala | Ile | Val | Arg | Asn | Leu | His | Tyr | Asp | | | | 200 | 205 | 210 |
| Thr | Phe | Leu | Val | Ile | Arg | Tyr | Val | Lys | Arg | His | Leu | Thr | Ile | Met | | | | 215 | 220 | 225 |
| Met | Asp | Ile | Asp | Gly | Lys | His | Glu | Trp | Arg | Asp | Cys | Ile | Glu | Val | | | | 230 | 235 | 240 |
| Pro | Gly | Val | Arg | Leu | Pro | Arg | Gly | Tyr | Tyr | Phe | Gly | Thr | Ser | Ser | | | | 245 | 250 | 255 |
| Ile | Thr | Gly | Asp | Leu | Ser | Asp | Asn | His | Asp | Val | Ile | Ser | Leu | Lys | | | | 260 | 265 | 270 |
| Leu | Phe | Glu | Leu | Thr | Val | Glu | Arg | Thr | Pro | Glu | Glu | Glu | Lys | Leu | | | | 275 | 280 | 285 |
| His | Arg | Asp | Val | Phe | Leu | Pro | Ser | Val | Asp | Asn | Met | Lys | Leu | Pro | | | | 290 | 295 | 300 |
| Glu | Met | Thr | Ala | Pro | Leu | Pro | Pro | Leu | Ser | Gly | Leu | Ala | Leu | Phe | | | | 305 | 310 | 315 |

Leu Ile Val Phe Phe Ser Leu Val Phe Ser Val Phe Ala Ile Val
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Ile Gly Ile Ile Leu Tyr Asn Lys Trp Gln Glu Gln Ser Arg Lys
335 340 345

Arg Phe Tyr

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<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 381

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<210> 382

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 382

cactctccag gctgcatgct cagg 24

<210> 383

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 383

gtcaaacggtt cgagtacttg aaacggggagc actcgctgtc gaagc 45

<210> 384

<211> 3150

<212> DNA

<213> Homo sapiens

<400> 384

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ggggactcca agatttccat gaagaaaatc agttgtcttc attcaagaat 150

tgggggtctgg ctcaagaattc ctgcagctgg tgaaaatctg ttttctagaa 200

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<210> 385

<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Phe | Arg | Asn | Arg | Phe | Leu | Leu | Leu | Leu | Ala | Leu | Ala | Ala |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ala | Phe | Val | Ser | Leu | Ser | Leu | Gln | Phe | Phe | His | Leu | Ile |
| | | | | 20 | | | | | 25 | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Val | Ser | Thr | Pro | Lys | Asn | Gly | Met | Ser | Ser | Lys | Ser | Arg | Lys |
| | | | | 35 | | | | | 40 | | | | 45 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Met | Pro | Asp | Pro | Val | Thr | Glu | Pro | Pro | Val | Thr | Asp | Pro |
| | | | | 50 | | | | | 55 | | | | 60 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Tyr | Glu | Ala | Leu | Leu | Tyr | Cys | Asn | Ile | Pro | Ser | Val | Ala | Glu |
| | | | | 65 | | | | | 70 | | | | 75 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Met | Glu | Gly | His | Ala | Pro | His | His | Phe | Lys | Leu | Val | Ser |
| | | | | 80 | | | | | 85 | | | | 90 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | His | Val | Phe | Ile | Arg | His | Gly | Asp | Arg | Tyr | Pro | Leu | Tyr | Val |
| | | | | 95 | | | | | 100 | | | | 105 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Pro | Lys | Thr | Lys | Arg | Pro | Glu | Ile | Asp | Cys | Thr | Leu | Val | Ala |
| | | | | 110 | | | | | 115 | | | | 120 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Arg | Lys | Pro | Tyr | His | Pro | Lys | Leu | Glu | Ala | Phe | Ile | Ser | His |
| | | | | 125 | | | | | 130 | | | | 135 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Lys | Gly | Ser | Gly | Ala | Ser | Phe | Glu | Ser | Pro | Leu | Asn | Ser |
| | | | | 140 | | | | | 145 | | | | 150 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Pro | Leu | Tyr | Pro | Asn | His | Pro | Leu | Cys | Glu | Met | Gly | Glu | Leu |
| | | | | 155 | | | | | 160 | | | | 165 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Gln | Thr | Gly | Val | Val | Gln | His | Leu | Gln | Asn | Gly | Gln | Leu | Leu |
| | | | | 170 | | | | | 175 | | | | 180 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asp | Ile | Tyr | Leu | Lys | Lys | His | Lys | Leu | Leu | Pro | Asn | Asp | Trp |
| | | | | 185 | | | | | 190 | | | | 195 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Asp | Gln | Leu | Tyr | Leu | Glu | Thr | Thr | Gly | Lys | Ser | Arg | Thr |
| | | | | 200 | | | | | 205 | | | | 210 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gln | Ser | Gly | Leu | Ala | Leu | Leu | Tyr | Gly | Phe | Leu | Pro | Asp | Phe |
| | | | | 215 | | | | | 220 | | | | 225 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Trp | Lys | Lys | Ile | Tyr | Phe | Arg | His | Gln | Pro | Ser | Ala | Leu | Phe |
| | | | | 230 | | | | | 235 | | | | 240 | |

| | | | |
|---|-----|-----|-----|
| Cys Ser Gly Ser Cys Tyr Cys Pro Val Arg Asn Gln Tyr Leu Glu | 245 | 250 | 255 |
| Lys Glu Gln Arg Arg Gln Tyr Leu Leu Arg Leu Lys Asn Ser Gln | 260 | 265 | 270 |
| Leu Glu Lys Thr Tyr Gly Glu Met Ala Lys Ile Val Asp Val Pro | 275 | 280 | 285 |
| Thr Lys Gln Leu Arg Ala Ala Asn Pro Ile Asp Ser Met Leu Cys | 290 | 295 | 300 |
| His Phe Cys His Asn Val Ser Phe Pro Cys Thr Arg Asn Gly Cys | 305 | 310 | 315 |
| Val Asp Met Glu His Phe Lys Val Ile Lys Thr His Gln Ile Glu | 320 | 325 | 330 |
| Asp Glu Arg Glu Arg Arg Glu Lys Lys Leu Tyr Phe Gly Tyr Ser | 335 | 340 | 345 |
| Leu Leu Gly Ala His Pro Ile Leu Asn Gln Thr Ile Gly Arg Met | 350 | 355 | 360 |
| Gln Arg Ala Thr Glu Gly Arg Lys Glu Glu Leu Phe Ala Leu Tyr | 365 | 370 | 375 |
| Ser Ala His Asp Val Thr Leu Ser Pro Val Leu Ser Ala Leu Gly | 380 | 385 | 390 |
| Leu Ser Glu Ala Arg Phe Pro Arg Phe Ala Ala Arg Leu Ile Phe | 395 | 400 | 405 |
| Glu Leu Trp Gln Asp Arg Glu Lys Pro Ser Glu His Ser Val Arg | 410 | 415 | 420 |
| Ile Leu Tyr Asn Gly Val Asp Val Thr Phe His Thr Ser Phe Cys | 425 | 430 | 435 |
| Gln Asp His His Lys Arg Ser Pro Lys Pro Met Cys Pro Leu Glu | 440 | 445 | 450 |
| Asn Leu Val Arg Phe Val Lys Arg Asp Met Phe Val Ala Leu Gly | 455 | 460 | 465 |
| Gly Ser Gly Thr Asn Tyr Tyr Asp Ala Cys His Arg Glu Gly Phe | 470 | 475 | 480 |

<210> 386

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 386

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<210> 387

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 387

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<210> 388

<211> 50

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<400> 388

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<210> 389

<211> 3313

<212> DNA

<213> Homo sapiens

<400> 389

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gccgctgttc accaatcggg gagagaaaag cggagatcct gctcgccttg 200
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gggcgaagga actgctcctg acttcagtgg ttaagggcag aattgaaaat 350
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gagcgcgag tccgcatcat cccagaggt aggacgcagc ttttcgcct 600
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acttgggagg ctgagtcagg agaattgctt taacctggga ggtggagggt 3250
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<210> 390

<211> 916

<212> PRT

<213> Homo sapiens

<400> 390

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|----|
| Met | Ile | Pro | Ala | Arg | Leu | His | Arg | Asp | Tyr | Lys | Gly | Leu | Val | Leu | | 1 | 5 | 10 | 15 |
| Leu | Gly | Ile | Leu | Leu | Gly | Thr | Leu | Trp | Glu | Thr | Gly | Cys | Thr | Gln | | 20 | 25 | 30 | |
| Ile | Arg | Tyr | Ser | Val | Pro | Glu | Glu | Leu | Glu | Lys | Gly | Ser | Arg | Val | | 35 | 40 | 45 | |
| Gly | Asp | Ile | Ser | Arg | Asp | Leu | Gly | Leu | Glu | Pro | Arg | Glu | Leu | Ala | | 50 | 55 | 60 | |
| Glu | Arg | Gly | Val | Arg | Ile | Ile | Pro | Arg | Gly | Arg | Thr | Gln | Leu | Phe | | 65 | 70 | 75 | |
| Ala | Leu | Asn | Pro | Arg | Ser | Gly | Ser | Leu | Val | Thr | Ala | Gly | Arg | Ile | | 80 | 85 | 90 | |
| Asp | Arg | Glu | Glu | Leu | Cys | Met | Gly | Ala | Ile | Lys | Cys | Gln | Leu | Asn | | 95 | 100 | 105 | |
| Leu | Asp | Ile | Leu | Met | Glu | Asp | Lys | Val | Lys | Ile | Tyr | Gly | Val | Glu | | 110 | 115 | 120 | |
| Val | Glu | Val | Arg | Asp | Ile | Asn | Asp | Asn | Ala | Pro | Tyr | Phe | Arg | Glu | | 125 | 130 | 135 | |
| Ser | Glu | Leu | Glu | Ile | Lys | Ile | Ser | Glu | Asn | Ala | Ala | Thr | Glu | Met | | 140 | 145 | 150 | |
| Arg | Phe | Pro | Leu | Pro | His | Ala | Trp | Asp | Pro | Asp | Ile | Gly | Lys | Asn | | 155 | 160 | 165 | |
| Ser | Leu | Gln | Ser | Tyr | Glu | Leu | Ser | Pro | Asn | Thr | His | Phe | Ser | Leu | | 170 | 175 | 180 | |
| Ile | Val | Gln | Asn | Gly | Ala | Asp | Gly | Ser | Lys | Tyr | Pro | Glu | Leu | Val | | 185 | 190 | 195 | |
| Leu | Lys | Arg | Ala | Leu | Asp | Arg | Glu | Glu | Lys | Ala | Ala | His | His | Leu | | 200 | 205 | 210 | |
| Val | Leu | Thr | Ala | Ser | Asp | Gly | Gly | Asp | Pro | Val | Arg | Thr | Gly | Thr | | 215 | 220 | 225 | |
| Ala | Arg | Ile | Arg | Val | Met | Val | Leu | Asp | Ala | Asn | Asp | Asn | Ala | Pro | | 230 | 235 | 240 | |
| Ala | Phe | Ala | Gln | Pro | Glu | Tyr | Arg | Ala | Ser | Val | Pro | Glu | Asn | Leu | | 245 | 250 | 255 | |
| Ala | Leu | Gly | Thr | Gln | Leu | Leu | Val | Val | Asn | Ala | Thr | Asp | Pro | Asp | | 260 | 265 | 270 | |
| Glu | Gly | Val | Asn | Ala | Glu | Val | Arg | Tyr | Ser | Phe | Arg | Tyr | Val | Asp | | 275 | 280 | 285 | |

| | | | |
|---|-----|-----|-----|
| Asp Lys Ala Ala Gln Val Phe Lys Leu Asp Cys Asn Ser Gly Thr | 290 | 295 | 300 |
| Ile Ser Thr Ile Gly Glu Leu Asp His Glu Glu Ser Gly Phe Tyr | 305 | 310 | 315 |
| Gln Met Glu Val Gln Ala Met Asp Asn Ala Gly Tyr Ser Ala Arg | 320 | 325 | 330 |
| Ala Lys Val Leu Ile Thr Val Leu Asp Val Asn Asp Asn Ala Pro | 335 | 340 | 345 |
| Glu Val Val Leu Thr Ser Leu Ala Ser Ser Val Pro Glu Asn Ser | 350 | 355 | 360 |
| Pro Arg Gly Thr Leu Ile Ala Leu Leu Asn Val Asn Asp Gln Asp | 365 | 370 | 375 |
| Ser Glu Glu Asn Gly Gln Val Ile Cys Phe Ile Gln Gly Asn Leu | 380 | 385 | 390 |
| Pro Phe Lys Leu Glu Lys Ser Tyr Gly Asn Tyr Tyr Ser Leu Val | 395 | 400 | 405 |
| Thr Asp Ile Val Leu Asp Arg Glu Gln Val Pro Ser Tyr Asn Ile | 410 | 415 | 420 |
| Thr Val Thr Ala Thr Asp Arg Gly Thr Pro Pro Leu Ser Thr Glu | 425 | 430 | 435 |
| Thr His Ile Ser Leu Asn Val Ala Asp Thr Asn Asp Asn Pro Pro | 440 | 445 | 450 |
| Val Phe Pro Gln Ala Ser Tyr Ser Ala Tyr Ile Pro Glu Asn Asn | 455 | 460 | 465 |
| Pro Arg Gly Val Ser Leu Val Ser Val Thr Ala His Asp Pro Asp | 470 | 475 | 480 |
| Cys Glu Glu Asn Ala Gln Ile Thr Tyr Ser Leu Ala Glu Asn Thr | 485 | 490 | 495 |
| Ile Gln Gly Ala Ser Leu Ser Ser Tyr Val Ser Ile Asn Ser Asp | 500 | 505 | 510 |
| Thr Gly Val Leu Tyr Ala Leu Ser Ser Phe Asp Tyr Glu Gln Phe | 515 | 520 | 525 |
| Arg Asp Leu Gln Val Lys Val Met Ala Arg Asp Asn Gly His Pro | 530 | 535 | 540 |
| Pro Leu Ser Ser Asn Val Ser Leu Ser Leu Phe Val Leu Asp Gln | 545 | 550 | 555 |
| Asn Asp Asn Ala Pro Glu Ile Leu Tyr Pro Ala Leu Pro Thr Asp | 560 | 565 | 570 |

| | | | |
|---|-----|-----|-----|
| Gly Ser Thr Gly Val Glu Leu Ala Pro Arg Ser Ala Glu Pro Gly | 575 | 580 | 585 |
| Tyr Leu Val Thr Lys Val Val Ala Val Asp Arg Asp Ser Gly Gln | 590 | 595 | 600 |
| Asn Ala Trp Leu Ser Tyr Arg Leu Leu Lys Ala Ser Glu Pro Gly | 605 | 610 | 615 |
| Leu Phe Ser Val Gly Leu His Thr Gly Glu Val Arg Thr Ala Arg | 620 | 625 | 630 |
| Ala Leu Leu Asp Arg Asp Ala Leu Lys Gln Ser Leu Val Val Ala | 635 | 640 | 645 |
| Val Gln Asp His Gly Gln Pro Pro Leu Ser Ala Thr Val Thr Leu | 650 | 655 | 660 |
| Thr Val Ala Val Ala Asp Ser Ile Pro Gln Val Leu Ala Asp Leu | 665 | 670 | 675 |
| Gly Ser Leu Glu Ser Pro Ala Asn Ser Glu Thr Ser Asp Leu Thr | 680 | 685 | 690 |
| Leu Tyr Leu Val Val Ala Val Ala Ala Val Ser Cys Val Phe Leu | 695 | 700 | 705 |
| Ala Phe Val Ile Leu Leu Leu Ala Leu Arg Leu Arg Arg Trp His | 710 | 715 | 720 |
| Lys Ser Arg Leu Leu Gln Ala Ser Gly Gly Gly Leu Thr Gly Ala | 725 | 730 | 735 |
| Pro Ala Ser His Phe Val Gly Val Asp Gly Val Gln Ala Phe Leu | 740 | 745 | 750 |
| Gln Thr Tyr Ser His Glu Val Ser Leu Thr Thr Asp Ser Arg Lys | 755 | 760 | 765 |
| Ser His Leu Ile Phe Pro Gln Pro Asn Tyr Ala Asp Met Leu Val | 770 | 775 | 780 |
| Ser Gln Glu Ser Phe Glu Lys Ser Glu Pro Leu Leu Leu Ser Gly | 785 | 790 | 795 |
| Asp Ser Val Phe Ser Lys Asp Ser His Gly Leu Ile Glu Val Ser | 800 | 805 | 810 |
| Leu Tyr Gln Ile Phe Phe Leu Phe Phe Phe Asn Cys Ser Val Ser | 815 | 820 | 825 |
| Gln Ala Gly Val Gln Arg Tyr Asp His Ser Ser Leu Arg Pro Gln | 830 | 835 | 840 |
| Thr Pro Arg Leu Lys Gln Leu Ser His Leu Cys Leu Arg Cys Asn | 845 | 850 | 855 |

Arg Asp Tyr Arg Cys Lys Pro Pro Thr Val Cys Leu Ser Ile Tyr
860 865 870

Leu Ser Ile Tyr Leu Ser Ile Tyr Leu Ser Ile Tyr Leu Leu Leu
875 880 885

Ser Cys Thr Asp Gly Ser Leu Thr Pro Val Ile Pro Val Leu Trp
890 895 900

Glu Ala Glu Ala Gly Gly Ser Pro Glu Val Gly Ser Leu Arg Pro
905 910 915

Ala

<210> 391

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 391

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<210> 392

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 393

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 393

ccgactgtga aagagaacgc ccagatcca cttgttcccc 40

<210> 394

<211> 999

<212> DNA

<213> Homo sapiens

<400> 394

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cccagttaaa aggtccaga atcgtgtacc aggagagaa ctgaagtact 100

ggggcctcct ccactgggtc cgaatcagta ggtgaccccg cccctggatt 150
 ctggaagacc tcaccatggg acgccccga cctcgtgcgg ccaagacgtg 200
 gatgttcctg ctcttgettg ggggagcctg ggcaggacac tccagggcac 250
 aggaggacaa ggtgctgggg ggtcatgagt gccaacccca ttcgcagcct 300
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 acacagtacg cctgggagac cacagcctac agaataaaga tggcccagag 450
 caagaaatac ctgtggttca gtccatccca caccctgct acaacagcag 500
 cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc 550
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 tggaggcccc ctggtgtgtg atggtgcact ccagggcatc acatcctggg 850
 gctcagaccc ctgtgggagg tccgacaaac ctggcgtcta taccaacatc 900
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 ctaggataag cactagatct cccttaataa actcacaact ctctggttc 999

<210> 395

<211> 260

<212> PRT

<213> Homo sapiens

<400> 395

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Pro | Arg | Pro | Arg | Ala | Ala | Lys | Thr | Trp | Met | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Leu | Gly | Gly | Ala | Trp | Ala | Gly | His | Ser | Arg | Ala | Gln | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Val | Leu | Gly | Gly | His | Glu | Cys | Gln | Pro | His | Ser | Gln | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Gln | Ala | Ala | Leu | Phe | Gln | Gly | Gln | Gln | Leu | Leu | Cys | Gly | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Val | Gly | Gly | Asn | Trp | Val | Leu | Thr | Ala | Ala | His | Cys | Lys |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Pro | Lys | Tyr | Thr | Val | Arg | Leu | Gly | Asp | His | Ser | Leu | Gln | Asn | 80 | 85 | 90 |
| Lys | Asp | Gly | Pro | Glu | Gln | Glu | Ile | Pro | Val | Val | Gln | Ser | Ile | Pro | 95 | 100 | 105 |
| His | Pro | Cys | Tyr | Asn | Ser | Ser | Asp | Val | Glu | Asp | His | Asn | His | Asp | 110 | 115 | 120 |
| Leu | Met | Leu | Leu | Gln | Leu | Arg | Asp | Gln | Ala | Ser | Leu | Gly | Ser | Lys | 125 | 130 | 135 |
| Val | Lys | Pro | Ile | Ser | Leu | Ala | Asp | His | Cys | Thr | Gln | Pro | Gly | Gln | 140 | 145 | 150 |
| Lys | Cys | Thr | Val | Ser | Gly | Trp | Gly | Thr | Val | Thr | Ser | Pro | Arg | Glu | 155 | 160 | 165 |
| Asn | Phe | Pro | Asp | Thr | Leu | Asn | Cys | Ala | Glu | Val | Lys | Ile | Phe | Pro | 170 | 175 | 180 |
| Gln | Lys | Lys | Cys | Glu | Asp | Ala | Tyr | Pro | Gly | Gln | Ile | Thr | Asp | Gly | 185 | 190 | 195 |
| Met | Val | Cys | Ala | Gly | Ser | Ser | Lys | Gly | Ala | Asp | Thr | Cys | Gln | Gly | 200 | 205 | 210 |
| Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asp | Gly | Ala | Leu | Gln | Gly | Ile | 215 | 220 | 225 |
| Thr | Ser | Trp | Gly | Ser | Asp | Pro | Cys | Gly | Arg | Ser | Asp | Lys | Pro | Gly | 230 | 235 | 240 |
| Val | Tyr | Thr | Asn | Ile | Cys | Arg | Tyr | Leu | Asp | Trp | Ile | Lys | Lys | Ile | 245 | 250 | 255 |
| Ile | Gly | Ser | Lys | Gly | | | | | | | | | | | 260 | | |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 396

cagcctacag aataaagatg gcc 24

<210> 397

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 397

ggtgcaatga tctgccaggc tgat 24

<210> 398

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 398

agaaatacct gtggttcagt ccacccaaa cccctgctac aacagcag 48

<210> 399

<211> 2236

<212> DNA

<213> Homo sapiens

<400> 399

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gccccgccc gggcccgccg ccgcgcccc gcccagggtga gcgctccgcc 150

cgccgcgagg ccccgcccc gcccgcccc gcccgcccc ggccggcggg 200

ggaaccgggc ggattcctcg cgcgtcaaac cacctgatcc cataaaacat 250

tcatacctccc ggcgccccgc gctgcgagcg ccccgccagt ccgcgccgcc 300

gccgcctcgc cctgtgcgc cctgcgcgcc ctgcgcaccc gcggcccag 350

cccagccaga gccgggagg gaggagcgcg ccgagcctcg tcccgcgccc 400

gggcccgggc cgggcccgtag cggcgggccc tggatgcgga cccggccgcg 450

gggagacggg cggccgcccc gaaacgactt tcagtcccc acgcgccccg 500

cccaaccct acgatgaaga gggcgtccgc tggaggaggc cggctgctgg 550

catgggtgct gtggctgcag gcctggcagg tggcagcccc atgccagggt 600

gcctgcgtat gctacaatga gcccaagggt acgacaagct gccccagca 650

gggcctgcag gctgtgccc tgggcatccc tgctgccagc cagcgcatct 700

tcctgcacgg caaccgcac tcgcatgtgc cagctgccag cttccgtgcc 750

tgccgcaacc tcaccatcct gtggctgcac tcgaatgtgc tggccgaat 800

tgatgcggct gccttcaact gcctggccct cctggagcag ctggacctca 850

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<210> 400

<211> 473

<212> PRT

<213> Homo sapiens

<400> 400

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Arg | Ala | Ser | Ala | Gly | Gly | Ser | Arg | Leu | Leu | Ala | Trp | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Trp | Leu | Gln | Ala | Trp | Gln | Val | Ala | Ala | Pro | Cys | Pro | Gly | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Cys | Val | Cys | Tyr | Asn | Glu | Pro | Lys | Val | Thr | Thr | Ser | Cys | Pro | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Gly | Leu | Gln | Ala | Val | Pro | Val | Gly | Ile | Pro | Ala | Ala | Ser | Gln |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Ile | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | His | Val | Pro | Ala | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Phe | Arg | Ala | Cys | Arg | Asn | Leu | Thr | Ile | Leu | Trp | Leu | His | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asn | Val | Leu | Ala | Arg | Ile | Asp | Ala | Ala | Ala | Phe | Thr | Gly | Leu | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Leu | Glu | Gln | Leu | Asp | Leu | Ser | Asp | Asn | Ala | Gln | Leu | Arg | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Asp | Pro | Ala | Thr | Phe | His | Gly | Leu | Gly | Arg | Leu | His | Thr | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| His | Leu | Asp | Arg | Cys | Gly | Leu | Gln | Glu | Leu | Gly | Pro | Gly | Leu | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Arg | Gly | Leu | Ala | Ala | Leu | Gln | Tyr | Leu | Tyr | Leu | Gln | Asp | Asn | Ala |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Leu | Gln | Ala | Leu | Pro | Asp | Asp | Thr | Phe | Arg | Asp | Leu | Gly | Asn | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Thr | His | Leu | Phe | Leu | His | Gly | Asn | Arg | Ile | Ser | Ser | Val | Pro | Glu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | Ala | Phe | Arg | Gly | Leu | His | Ser | Leu | Asp | Arg | Leu | Leu | Leu | His |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Asn | Arg | Val | Ala | His | Val | His | Pro | His | Ala | Phe | Arg | Asp | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Arg | Leu | Met | Thr | Leu | Tyr | Leu | Phe | Ala | Asn | Asn | Leu | Ser | Ala |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Pro | Thr | Glu | Ala | Leu | Ala | Pro | Leu | Arg | Ala | Leu | Gln | Tyr | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Arg | Leu | Asn | Asp | Asn | Pro | Trp | Val | Cys | Asp | Cys | Arg | Ala | Arg | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |

| | | | |
|---------------------|---------------------|-------------------------|-----|
| Leu Trp Ala Trp | Leu Gln Lys Phe Arg | Gly Ser Ser Ser Glu Val | |
| 275 | | 280 | 285 |
| Pro Cys Ser Leu | Pro Gln Arg Leu Ala | Gly Arg Asp Leu Lys Arg | |
| 290 | | 295 | 300 |
| Leu Ala Ala Asn Asp | Leu Gln Gly Cys | Ala Val Ala Thr Gly Pro | |
| 305 | | 310 | 315 |
| Tyr His Pro Ile Trp | Thr Gly Arg Ala Thr | Asp Glu Glu Pro Leu | |
| 320 | | 325 | 330 |
| Gly Leu Pro Lys Cys | Cys Gln Pro Asp | Ala Ala Asp Lys Ala Ser | |
| 335 | | 340 | 345 |
| Val Leu Glu Pro Gly | Arg Pro Ala Ser | Ala Gly Asn Ala Leu Lys | |
| 350 | | 355 | 360 |
| Gly Arg Val Pro | Pro Gly Asp Ser Pro | Pro Gly Asn Gly Ser Gly | |
| 365 | | 370 | 375 |
| Pro Arg His Ile Asn | Asp Ser Pro Phe | Gly Thr Leu Pro Gly Ser | |
| 380 | | 385 | 390 |
| Ala Glu Pro Pro | Leu Thr Ala Val Arg | Pro Glu Gly Ser Glu Pro | |
| 395 | | 400 | 405 |
| Pro Gly Phe Pro | Thr Ser Gly Pro Arg | Arg Arg Pro Gly Cys Ser | |
| 410 | | 415 | 420 |
| Arg Lys Asn Arg | Thr Arg Ser His Cys | Arg Leu Gly Gln Ala Gly | |
| 425 | | 430 | 435 |
| Ser Gly Gly Gly | Gly Thr Gly Asp Ser | Glu Gly Ser Gly Ala Leu | |
| 440 | | 445 | 450 |
| Pro Ser Leu Thr | Cys Ser Leu Thr Pro | Leu Gly Leu Ala Leu Val | |
| 455 | | 460 | 465 |
| Leu Trp Thr Val | Leu Gly Pro Cys | | |
| 470 | | | |

<210> 401

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 401

tggtgccct gcagtacctc tacc 24

<210> 402

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 402

ccctgcaggt cattggcagc tagg 24

<210> 403

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 403

aggcactgcc tgatgacacc ttccgcgacc tgggcaacct cacac 45

<210> 404

<211> 2738

<212> DNA

<213> Homo sapiens

<400> 404

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agcctcagat actggggact ttacagtccc acagaaccgt cctcccagga 150
agctgaatcc agcaagaaca atggaggcca gcgggaagct catttgcaga 200
caaaggcaag tccttttttc ctttctcctt ttgggcttat ctctggcggg 250
cgcggcggaa cctagaagct attctgtggt ggaggaaact gagggcagct 300
cctttgtcac caatttagca aaggacctgg gtctggagca gagggaattc 350
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ctagagagtc ctttcgagtt ttttcaagct gagctgcaag taatagacat 550
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<210> 405
 <211> 798
 <212> PRT
 <213> Homo sapiens

<400> 405

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Glu | Ala | Ser | Gly | Lys | Leu | Ile | Cys | Arg | Gln | Arg | Gln | Val | Leu | 1 | 5 | 10 | 15 |
| Phe | Ser | Phe | Leu | Leu | Leu | Gly | Leu | Ser | Leu | Ala | Gly | Ala | Ala | Glu | 20 | 25 | 30 | |
| Pro | Arg | Ser | Tyr | Ser | Val | Val | Glu | Glu | Thr | Glu | Gly | Ser | Ser | Phe | 35 | 40 | 45 | |
| Val | Thr | Asn | Leu | Ala | Lys | Asp | Leu | Gly | Leu | Glu | Gln | Arg | Glu | Phe | 50 | 55 | 60 | |
| Ser | Arg | Arg | Gly | Val | Arg | Val | Val | Ser | Arg | Gly | Asn | Lys | Leu | His | 65 | 70 | 75 | |
| Leu | Gln | Leu | Asn | Gln | Glu | Thr | Ala | Asp | Leu | Leu | Leu | Asn | Glu | Lys | 80 | 85 | 90 | |
| Leu | Asp | Arg | Glu | Asp | Leu | Cys | Gly | His | Thr | Glu | Pro | Cys | Val | Leu | 95 | 100 | 105 | |
| Arg | Phe | Gln | Val | Leu | Leu | Glu | Ser | Pro | Phe | Glu | Phe | Phe | Gln | Ala | 110 | 115 | 120 | |
| Glu | Leu | Gln | Val | Ile | Asp | Ile | Asn | Asp | His | Ser | Pro | Val | Phe | Leu | 125 | 130 | 135 | |
| Asp | Lys | Gln | Met | Leu | Val | Lys | Val | Ser | Glu | Ser | Ser | Pro | Pro | Gly | 140 | 145 | 150 | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Thr Thr Phe Pro | Leu Lys Asn Ala Glu | Asp Leu Asp Val Gly Gln | 155 | 160 | 165 |
| Asn Asn Ile Glu | Asn Tyr Ile Ile Ser | Pro Asn Ser Tyr Phe Arg | 170 | 175 | 180 |
| Val Leu Thr Arg | Lys Arg Ser Asp Gly | Arg Lys Tyr Pro Glu Leu | 185 | 190 | 195 |
| Val Leu Asp Lys | Ala Leu Asp Arg Glu | Glu Glu Ala Glu Leu Arg | 200 | 205 | 210 |
| Leu Thr Leu Thr | Ala Leu Asp Gly Gly | Ser Pro Pro Arg Ser Gly | 215 | 220 | 225 |
| Thr Ala Gln Val | Tyr Ile Glu Val Leu | Asp Val Asn Asp Asn Ala | 230 | 235 | 240 |
| Pro Glu Phe Glu | Gln Pro Phe Tyr Arg | Val Gln Ile Ser Glu Asp | 245 | 250 | 255 |
| Ser Pro Val Gly | Phe Leu Val Val Lys | Val Ser Ala Thr Asp Val | 260 | 265 | 270 |
| Asp Thr Gly Val | Asn Gly Glu Ile Ser | Tyr Ser Leu Phe Gln Ala | 275 | 280 | 285 |
| Ser Glu Glu Ile | Gly Lys Thr Phe Lys | Ile Asn Pro Leu Thr Gly | 290 | 295 | 300 |
| Glu Ile Glu Leu | Lys Lys Gln Leu Asp | Phe Glu Lys Leu Gln Ser | 305 | 310 | 315 |
| Tyr Glu Val Asn | Ile Glu Ala Arg Asp | Ala Gly Thr Phe Ser Gly | 320 | 325 | 330 |
| Lys Cys Thr Val | Leu Ile Gln Val Ile | Asp Val Asn Asp His Ala | 335 | 340 | 345 |
| Pro Glu Val Thr | Met Ser Ala Phe Thr | Ser Pro Ile Pro Glu Asn | 350 | 355 | 360 |
| Ala Pro Glu Thr | Val Val Ala Leu Phe | Ser Val Ser Asp Leu Asp | 365 | 370 | 375 |
| Ser Gly Glu Asn | Gly Lys Ile Ser Cys | Ser Ile Gln Glu Asp Leu | 380 | 385 | 390 |
| Pro Phe Leu Leu | Lys Ser Ala Glu Asn | Phe Tyr Thr Leu Leu Thr | 395 | 400 | 405 |
| Glu Arg Pro Leu | Asp Arg Glu Ser Arg | Ala Glu Tyr Asn Ile Thr | 410 | 415 | 420 |
| Ile Thr Val Thr | Asp Leu Gly Thr Pro | Met Leu Ile Thr Gln Leu | 425 | 430 | 435 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asn Met Thr Val | Leu Ile Ala Asp Val | Asn Asp Asn Ala Pro Ala | 440 | 445 | 450 |
| Phe Thr Gln Thr | Ser Tyr Thr Leu Phe | Val Arg Glu Asn Asn Ser | 455 | 460 | 465 |
| Pro Ala Leu His | Ile Arg Ser Val Ser | Ala Thr Asp Arg Asp Ser | 470 | 475 | 480 |
| Gly Thr Asn Ala | Gln Val Thr Tyr Ser | Leu Leu Pro Pro Gln Asp | 485 | 490 | 495 |
| Pro His Leu Pro | Leu Thr Ser Leu Val | Ser Ile Asn Ala Asp Asn | 500 | 505 | 510 |
| Gly His Leu Phe | Ala Leu Arg Ser Leu | Asp Tyr Glu Ala Leu Gln | 515 | 520 | 525 |
| Gly Phe Gln Phe | Arg Val Gly Ala Ser | Asp His Gly Ser Pro Ala | 530 | 535 | 540 |
| Leu Ser Ser Glu | Ala Leu Val Arg Val | Val Val Leu Asp Ala Asn | 545 | 550 | 555 |
| Asp Asn Ser Pro | Phe Val Leu Tyr Pro | Leu Gln Asn Gly Ser Ala | 560 | 565 | 570 |
| Pro Cys Thr Glu | Leu Val Pro Arg Ala | Ala Glu Pro Gly Tyr Leu | 575 | 580 | 585 |
| Val Thr Lys Val | Val Ala Val Asp Gly | Asp Ser Gly Gln Asn Ala | 590 | 595 | 600 |
| Trp Leu Ser Tyr | Gln Leu Leu Lys Ala | Thr Glu Leu Gly Leu Phe | 605 | 610 | 615 |
| Gly Val Trp Ala | His Asn Gly Glu Val | Arg Thr Ala Arg Leu Leu | 620 | 625 | 630 |
| Ser Glu Arg Asp | Ala Ala Lys His Arg | Leu Val Val Leu Val Lys | 635 | 640 | 645 |
| Asp Asn Gly Glu | Pro Pro Arg Ser Ala | Thr Ala Thr Leu His Val | 650 | 655 | 660 |
| Leu Leu Val Asp | Gly Phe Ser Gln Pro | Tyr Leu Pro Leu Pro Glu | 665 | 670 | 675 |
| Ala Ala Pro Thr | Gln Ala Gln Ala Asp | Leu Leu Thr Val Tyr Leu | 680 | 685 | 690 |
| Val Val Ala Leu | Ala Ser Val Ser Ser | Leu Phe Leu Phe Ser Val | 695 | 700 | 705 |
| Leu Leu Phe Val | Ala Val Arg Leu Cys | Arg Arg Ser Arg Ala Ala | 710 | 715 | 720 |

Ser Val Gly Arg Cys Leu Val Pro Glu Gly Pro Leu Pro Gly His
725 730 735

Leu Val Asp Met Ser Gly Thr Arg Thr Leu Ser Gln Ser Tyr Gln
740 745 750

Tyr Glu Val Cys Leu Ala Gly Gly Ser Gly Thr Asn Glu Phe Lys
755 760 765

Phe Leu Lys Pro Ile Ile Pro Asn Phe Pro Pro Gln Cys Pro Gly
770 775 780

Lys Glu Ile Gln Gly Asn Ser Thr Phe Pro Asn Asn Phe Gly Phe
785 790 795

Asn Ile Gln

<210> 406

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 406

ctgagaacgc gcctgaaact gtg 23

<210> 407

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 407

agcgttgtca ttgacatcgg cg 22

<210> 408

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 408

ttagttgctc cattcaggag gatctaccct tcctcctgaa atccgcggaa 50

<210> 409

<211> 1379

<212> DNA

<213> Homo sapiens

<400> 409

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cggtcgacga ccgccccgcg tcatgcggct cctcggtggg tggcaagtat 150
tgctgtgggt gctgggactt cccgtccgcg gcgtggaggt tgcagaggaa 200
agtgtgcgt tatggtcaga ggagcagcct gctcacctc tccaggtggg 250
ggctgtgtac ctgggtgagg aggagctcct gcatgacctg atgggccagg 300
acagggcagc agaagaggcc aatgcggtgc tggggctgga cacccaaggc 350
gatcacatgg tgatgctgtc tgtgattcct ggggaagctg aggacaaagt 400
gagttcagag cctagcggcg tcacctgtgg tgctggagga gcggaggact 450
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gctcttcaact ttttggcact ggatgcatct cagcacagca gcctttctac 850
caggtttggc accgtagctg ttccataatat ttattattt caaggagcta 900
aaccaatggc cagatttaat catacagatc gaactgga aactgaaa 950
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gcaggaacat gtggagtagt gatggtctga aagaagttgg aaagaggaa 1200
ttcaatcctt cgtttcagaa attagtgtc cagtttcata cattttctcc 1250
agtgcgtgt tgacttgaaa cttcaggcag attaaaagaa tcatttggtg 1300
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caataagcaa atgcaaaaat attcaatag 1379

<211> 360
<212> PRT
<213> Homo sapiens

<400> 410

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Ala | Ala | Gly | Arg | Arg | Pro | Pro | Arg | Val | Met | Arg | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Trp | Trp | Gln | Val | Leu | Leu | Trp | Val | Leu | Gly | Leu | Pro | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Arg | Gly | Val | Glu | Val | Ala | Glu | Glu | Ser | Gly | Arg | Leu | Trp | Ser | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Gln | Pro | Ala | His | Pro | Leu | Gln | Val | Gly | Ala | Val | Tyr | Leu | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Glu | Glu | Leu | Leu | His | Asp | Pro | Met | Gly | Gln | Asp | Arg | Ala | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Glu | Ala | Asn | Ala | Val | Leu | Gly | Leu | Asp | Thr | Gln | Gly | Asp | His |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Val | Met | Leu | Ser | Val | Ile | Pro | Gly | Glu | Ala | Glu | Asp | Lys | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Ser | Glu | Pro | Ser | Gly | Val | Thr | Cys | Gly | Ala | Gly | Gly | Ala | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Ser | Arg | Cys | Asn | Val | Arg | Glu | Ser | Leu | Phe | Ser | Leu | Asp | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Gly | Ala | His | Phe | Pro | Asp | Arg | Glu | Glu | Glu | Tyr | Tyr | Thr | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Glu | Val | Ala | Glu | Ser | Asp | Ala | Ala | Pro | Thr | Glu | Asp | Ser | Asn |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asn | Thr | Glu | Ser | Leu | Lys | Ser | Pro | Lys | Val | Asn | Cys | Glu | Glu | Arg |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Ile | Thr | Gly | Leu | Glu | Asn | Phe | Thr | Leu | Lys | Ile | Leu | Asn | Met |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Gln | Asp | Leu | Met | Asp | Phe | Leu | Asn | Pro | Asn | Gly | Ser | Asp | Cys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Thr | Leu | Val | Leu | Phe | Tyr | Thr | Pro | Trp | Cys | Arg | Phe | Ser | Ala | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Ala | Pro | His | Phe | Asn | Ser | Leu | Pro | Arg | Ala | Phe | Pro | Ala | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| His | Phe | Leu | Ala | Leu | Asp | Ala | Ser | Gln | His | Ser | Ser | Leu | Ser | Thr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Arg | Phe | Gly | Thr | Val | Ala | Val | Pro | Asn | Ile | Leu | Leu | Phe | Gln | Gly |

| 260 | 265 | 270 |
|-----------------|---|-----|
| Ala Lys Pro Met | Ala Arg Phe Asn His Thr Asp Arg Thr Leu Glu | |
| 275 | 280 | 285 |
| Thr Leu Lys Ile | Phe Ile Phe Asn Gln Thr Gly Ile Glu Ala Lys | |
| 290 | 295 | 300 |
| Lys Asn Val Val | Val Thr Gln Ala Asp Gln Ile Gly Pro Leu Pro | |
| 305 | 310 | 315 |
| Ser Thr Leu Ile | Lys Ser Val Asp Trp Leu Leu Val Phe Ser Leu | |
| 320 | 325 | 330 |
| Phe Phe Leu Ile | Ser Phe Ile Met Tyr Ala Thr Ile Arg Thr Glu | |
| 335 | 340 | 345 |
| Ser Ile Arg Trp | Leu Ile Pro Gly Gln Glu Gln Glu His Val Glu | |
| 350 | 355 | 360 |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 411

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<210> 412

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 412

ccacatgttc ctgctcttgc cctgg 25

<210> 413

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 413

cggtagtgcac tgtactctag tcctgtttta caccctgtgg tgccg 45

<210> 414

<211> 1196

<212> DNA

<213> Homo sapiens

<400> 414

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ggctcggcgc gcgggctctt cctctttggc cagcccgact tctcctacaa 150
gcgcagcaat tgcaagccca tcccgggtcaa cctgcagctg tgccacggca 200
tcgaatacca gaacatgcgg ctgcccgaacc tgctggggcca cgagaccatg 250
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caggtgaagg accgctgcgc cccgggtcatg tccgccttcg gcttcccctg 450
gcccgcacatg cttgagtgcg accgtttccc ccaggacaac gacctttgca 500
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accatttaca agctgaacgg tgtgtccgaa agggacctga agaaatcgg 750
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<210> 415

<211> 295

<212> PRT

<213> Homo sapiens

<400> 415

Met Leu Gln Gly Pro Gly Ser Leu Leu Leu Leu Phe Leu Ala Ser

| | | | |
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| 1 | 5 | 10 | 15 |
| His Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln | 20 | 25 | 30 |
| Pro Asp Phe Ser Tyr Lys Arg Ser Asn Cys Lys Pro Ile Pro Val | 35 | 40 | 45 |
| Asn Leu Gln Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu | 50 | 55 | 60 |
| Pro Asn Leu Leu Gly His Glu Thr Met Lys Glu Val Leu Glu Gln | 65 | 70 | 75 |
| Ala Gly Ala Trp Ile Pro Leu Val Met Lys Gln Cys His Pro Asp | 80 | 85 | 90 |
| Thr Lys Lys Phe Leu Cys Ser Leu Phe Ala Pro Val Cys Leu Asp | 95 | 100 | 105 |
| Asp Leu Asp Glu Thr Ile Gln Pro Cys His Ser Leu Cys Val Gln | 110 | 115 | 120 |
| Val Lys Asp Arg Cys Ala Pro Val Met Ser Ala Phe Gly Phe Pro | 125 | 130 | 135 |
| Trp Pro Asp Met Leu Glu Cys Asp Arg Phe Pro Gln Asp Asn Asp | 140 | 145 | 150 |
| Leu Cys Ile Pro Leu Ala Ser Ser Asp His Leu Leu Pro Ala Thr | 155 | 160 | 165 |
| Glu Glu Ala Pro Lys Val Cys Glu Ala Cys Lys Asn Lys Asn Asp | 170 | 175 | 180 |
| Asp Asp Asn Asp Ile Met Glu Thr Leu Cys Lys Asn Asp Phe Ala | 185 | 190 | 195 |
| Leu Lys Ile Lys Val Lys Glu Ile Thr Tyr Ile Asn Arg Asp Thr | 200 | 205 | 210 |
| Lys Ile Ile Leu Glu Thr Lys Ser Lys Thr Ile Tyr Lys Leu Asn | 215 | 220 | 225 |
| Gly Val Ser Glu Arg Asp Leu Lys Lys Ser Val Leu Trp Leu Lys | 230 | 235 | 240 |
| Asp Ser Leu Gln Cys Thr Cys Glu Glu Met Asn Asp Ile Asn Ala | 245 | 250 | 255 |
| Pro Tyr Leu Val Met Gly Gln Lys Gln Gly Gly Glu Leu Val Ile | 260 | 265 | 270 |
| Thr Ser Val Lys Arg Trp Gln Lys Gly Gln Arg Glu Phe Lys Arg | 275 | 280 | 285 |
| Ile Ser Arg Ser Ile Arg Lys Leu Gln Cys | | | |

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<210> 417
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<220>
<223> Synthetic oligonucleotide probe

<400> 417
cctcacaggt gcactgcaag ctgtc 25

<210> 418
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 418
ctcttctct ttggccagcc cgacttctcc tacaagcgca gaattgc 47

<210> 419
<211> 1830
<212> DNA
<213> Homo sapiens

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cgctgggtgt tctgtctcgc gatcagcctg ctcaactgct ccaacgccac 150
gctgtggctc agctttgcac ctgtggctga cgtcattgct gaggacttgg 200
tctgtccat ggagcagatc aactggctgt cactggtcta cctcgtggta 250
tccaccccat ttggcgtggc ggccatctgg atcctggact ccgtcgggct 300
ccgtgcggcg accatcctgg gtgcgtggct gaactttgcc gggagtgtgc 350
tacgcatggt gccctgcatg gttgttggga cccaaaaccc atttgccttc 400

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gaacaaggcc tatgtcatcc tggctgtgtg cttgggggga atgatcggga 800
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<210> 420
<211> 560
<212> PRT
<213> Homo sapiens

<400> 420

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Gly | Pro | Thr | Glu | Ala | Glu | Thr | Gly | Leu | Ala | Glu | Pro | Arg | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ala | Leu | Cys | Ala | Gln | Arg | Gly | His | Arg | Thr | Tyr | Ala | Arg | Arg | Trp | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Phe | Leu | Leu | Ala | Ile | Ser | Leu | Leu | Asn | Cys | Ser | Asn | Ala | Thr | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Leu | Trp | Leu | Ser | Phe | Ala | Pro | Val | Ala | Asp | Val | Ile | Ala | Glu | Asp | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Val | Leu | Ser | Met | Glu | Gln | Ile | Asn | Trp | Leu | Ser | Leu | Val | Tyr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Leu | Val | Val | Ser | Thr | Pro | Phe | Gly | Val | Ala | Ala | Ile | Trp | Ile | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Asp | Ser | Val | Gly | Leu | Arg | Ala | Ala | Thr | Ile | Leu | Gly | Ala | Trp | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asn | Phe | Ala | Gly | Ser | Val | Leu | Arg | Met | Val | Pro | Cys | Met | Val | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Thr | Gln | Asn | Pro | Phe | Ala | Phe | Leu | Met | Gly | Gly | Gln | Ser | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Cys | Ala | Leu | Ala | Gln | Ser | Leu | Val | Ile | Phe | Ser | Pro | Ala | Lys | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Ala | Leu | Trp | Phe | Pro | Glu | His | Gln | Arg | Ala | Thr | Ala | Asn | Met | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Ala | Thr | Met | Ser | Asn | Pro | Leu | Gly | Val | Leu | Val | Ala | Asn | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Ser | Pro | Val | Leu | Val | Lys | Lys | Gly | Glu | Asp | Ile | Pro | Leu | Met | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Gly | Val | Tyr | Thr | Ile | Pro | Ala | Gly | Val | Val | Cys | Leu | Leu | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Thr | Ile | Cys | Leu | Trp | Glu | Ser | Val | Pro | Pro | Thr | Pro | Pro | Ser | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Ala | Ala | Ser | Ser | Thr | Ser | Glu | Lys | Phe | Leu | Asp | Gly | Leu | Lys | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Gln | Leu | Met | Trp | Asn | Lys | Ala | Tyr | Val | Ile | Leu | Ala | Val | Cys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |

| | | |
|-------------------------------------|-------------------------|-------------------------|
| Leu Gly Gly Met | Ile Gly Ile Ser Ala | Ser Phe Ser Ala Leu Leu |
| 260 | 265 | 270 |
| Glu Gln Ile Leu Cys Ala Ser Gly His | Ser Ser Gly Phe Ser Gly | |
| 275 | 280 | 285 |
| Leu Cys Gly Ala Leu Phe Ile Thr Phe | Gly Ile Leu Gly Ala Leu | |
| 290 | 295 | 300 |
| Ala Leu Gly Pro Tyr Val Asp Arg Thr | Lys His Phe Thr Glu Ala | |
| 305 | 310 | 315 |
| Thr Lys Ile Gly Leu Cys Leu Phe Ser | Leu Ala Cys Val Pro Phe | |
| 320 | 325 | 330 |
| Ala Leu Val Ser Gln Leu Gln Gly Gln | Thr Leu Ala Leu Ala Ala | |
| 335 | 340 | 345 |
| Thr Cys Ser Leu Leu Gly Leu Phe Gly | Phe Ser Val Gly Pro Val | |
| 350 | 355 | 360 |
| Ala Met Glu Leu Ala Val Glu Cys Ser | Phe Pro Val Gly Glu Gly | |
| 365 | 370 | 375 |
| Ala Ala Thr Gly Met Ile Phe Val Leu | Gly Gln Ala Glu Gly Ile | |
| 380 | 385 | 390 |
| Leu Ile Met Leu Ala Met Thr Ala Leu | Thr Val Arg Arg Ser Glu | |
| 395 | 400 | 405 |
| Pro Ser Leu Ser Thr Cys Gln Gln Gly | Glu Asp Pro Leu Asp Trp | |
| 410 | 415 | 420 |
| Thr Val Ser Leu Leu Leu Met Ala Gly | Leu Cys Thr Phe Phe Ser | |
| 425 | 430 | 435 |
| Cys Ile Leu Ala Val Phe Phe His Thr | Pro Tyr Arg Arg Leu Gln | |
| 440 | 445 | 450 |
| Ala Glu Ser Gly Glu Pro Pro Ser Thr | Arg Asn Ala Val Gly Gly | |
| 455 | 460 | 465 |
| Ala Asp Ser Gly Pro Gly Val Asp Arg | Gly Gly Ala Gly Arg Ala | |
| 470 | 475 | 480 |
| Gly Val Leu Gly Pro Ser Thr Ala Thr | Pro Glu Cys Thr Ala Arg | |
| 485 | 490 | 495 |
| Gly Ala Ser Leu Glu Asp Pro Arg Gly | Pro Gly Ser Pro His Pro | |
| 500 | 505 | 510 |
| Ala Cys His Arg Ala Thr Pro Arg Ala | Gln Gly Pro Ala Ala Thr | |
| 515 | 520 | 525 |
| Asp Ala Pro Ser Arg Pro Gly Arg Leu | Ala Gly Arg Val Gln Ala | |
| 530 | 535 | 540 |

Ser Arg Phe Ile Asp Pro Ala Gly Ser His Ser Ser Phe Ser Ser
545 550 555

Pro Trp Val Ile Thr
560

<210> 421
<211> 24
<212> DNA
<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 422
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 422
cggttcaata aacctggacg cttgg 25

<210> 423
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 423
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<210> 424
<211> 4313
<212> DNA
<213> Homo sapiens

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aaggttgtgc cggcagctct gggggaagga gcacggggct gatcaagcca 250
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<210> 425

<211> 1184

<212> PRT

<213> Homo sapiens

<400> 425

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Gln | Leu | Leu | Gln | Leu | Leu | Leu | Gly | Leu | Leu | Gly | Pro | Gly |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

| | | | |
|-----------------|-------------------------|-----------------|-----|
| Gly Tyr Leu Phe | Leu Leu Gly Asp Cys Gln | Glu Val Thr Thr | Leu |
| | 20 | 25 | 30 |
| Thr Val Lys Tyr | Gln Val Ser Glu Glu Val | Pro Ser Gly Thr | Val |
| | 35 | 40 | 45 |
| Ile Gly Lys Leu | Ser Gln Glu Leu Gly Arg | Glu Glu Arg Arg | Arg |
| | 50 | 55 | 60 |
| Gln Ala Gly Ala | Ala Phe Gln Val Leu Gln | Leu Pro Gln Ala | Leu |
| | 65 | 70 | 75 |
| Pro Ile Gln Val | Asp Ser Glu Glu Gly Leu | Leu Ser Thr Gly | Arg |
| | 80 | 85 | 90 |
| Arg Leu Asp Arg | Glu Gln Leu Cys Arg Gln | Trp Asp Pro Cys | Leu |
| | 95 | 100 | 105 |
| Val Ser Phe Asp | Val Leu Ala Thr Gly Asp | Leu Ala Leu Ile | His |
| | 110 | 115 | 120 |
| Val Glu Ile Gln | Val Leu Asp Ile Asn Asp | His Gln Pro Arg | Phe |
| | 125 | 130 | 135 |
| Pro Lys Gly Glu | Gln Glu Leu Glu Ile Ser | Glu Ser Ala Ser | Leu |
| | 140 | 145 | 150 |
| Arg Thr Arg Ile | Pro Leu Asp Arg Ala Leu | Asp Pro Asp Thr | Gly |
| | 155 | 160 | 165 |
| Pro Asn Thr Leu | His Thr Tyr Thr Leu Ser | Pro Ser Glu His | Phe |
| | 170 | 175 | 180 |
| Ala Leu Asp Val | Ile Val Gly Pro Asp Glu | Thr Lys His Ala | Glu |
| | 185 | 190 | 195 |
| Leu Ile Val Val | Lys Glu Leu Asp Arg Glu | Ile His Ser Phe | Phe |
| | 200 | 205 | 210 |
| Asp Leu Val Leu | Thr Ala Tyr Asp Asn Gly | Asn Pro Pro Lys | Ser |
| | 215 | 220 | 225 |
| Gly Thr Ser Leu | Val Lys Val Asn Val Leu | Asp Ser Asn Asp | Asn |
| | 230 | 235 | 240 |
| Ser Pro Ala Phe | Ala Glu Ser Ser Leu Ala | Leu Glu Ile Gln | Glu |
| | 245 | 250 | 255 |
| Asp Ala Ala Pro | Gly Thr Leu Leu Ile Lys | Leu Thr Ala Thr | Asp |
| | 260 | 265 | 270 |
| Pro Asp Gln Gly | Pro Asn Gly Glu Val Glu | Phe Phe Leu Ser | Lys |
| | 275 | 280 | 285 |
| His Met Pro Pro | Glu Val Leu Asp Thr Phe | Ser Ile Asp Ala | Lys |
| | 290 | 295 | 300 |

| | | | | | |
|-----------------|-----------------------------|-------------------------|-----|-----|-----|
| Thr Gly Gln Val | Ile Leu Arg Arg Pro | Leu Asp Tyr Glu Lys Asn | 305 | 310 | 315 |
| Pro Ala Tyr Glu | Val Asp Val Gln Ala Arg Asp | Leu Gly Pro Asn | 320 | 325 | 330 |
| Pro Ile Pro Ala | His Cys Lys Val Leu | Ile Lys Val Leu Asp Val | 335 | 340 | 345 |
| Asn Asp Asn Ile | Pro Ser Ile His Val | Thr Trp Ala Ser Gln Pro | 350 | 355 | 360 |
| Ser Leu Val Ser | Glu Ala Leu Pro Lys | Asp Ser Phe Ile Ala Leu | 365 | 370 | 375 |
| Val Met Ala Asp | Asp Leu Asp Ser Gly | His Asn Gly Leu Val His | 380 | 385 | 390 |
| Cys Trp Leu Ser | Gln Glu Leu Gly His | Phe Arg Leu Lys Arg Thr | 395 | 400 | 405 |
| Asn Gly Asn Thr | Tyr Met Leu Leu Thr | Asn Ala Thr Leu Asp Arg | 410 | 415 | 420 |
| Glu Gln Trp Pro | Lys Tyr Thr Leu Thr | Leu Leu Ala Gln Asp Gln | 425 | 430 | 435 |
| Gly Leu Gln Pro | Leu Ser Ala Lys Lys | Gln Leu Ser Ile Gln Ile | 440 | 445 | 450 |
| Ser Asp Ile Asn | Asp Asn Ala Pro Val | Phe Glu Lys Ser Arg Tyr | 455 | 460 | 465 |
| Glu Val Ser Thr | Arg Glu Asn Asn Leu | Pro Ser Leu His Leu Ile | 470 | 475 | 480 |
| Thr Ile Lys Ala | His Asp Ala Asp Leu | Gly Ile Asn Gly Lys Val | 485 | 490 | 495 |
| Ser Tyr Arg Ile | Gln Asp Ser Pro Val | Ala His Leu Val Ala Ile | 500 | 505 | 510 |
| Asp Ser Asn Thr | Gly Glu Val Thr Ala | Gln Arg Ser Leu Asn Tyr | 515 | 520 | 525 |
| Glu Glu Met Ala | Gly Phe Glu Phe Gln | Val Ile Ala Glu Asp Ser | 530 | 535 | 540 |
| Gly Gln Pro Met | Leu Ala Ser Ser Val | Ser Val Trp Val Ser Leu | 545 | 550 | 555 |
| Leu Asp Ala Asn | Asp Asn Ala Pro Glu | Val Val Gln Pro Val Leu | 560 | 565 | 570 |
| Ser Asp Gly Lys | Ala Ser Leu Ser Val | Leu Val Asn Ala Ser Thr | 575 | 580 | 585 |

| | | | |
|---|-----|-----|-----|
| Gly His Leu Leu Val Pro Ile Glu Thr Pro Asn Gly Leu Gly Pro | 590 | 595 | 600 |
| Ala Gly Thr Asp Thr Pro Pro Leu Ala Thr His Ser Ser Arg Pro | 605 | 610 | 615 |
| Phe Leu Leu Thr Thr Ile Val Ala Arg Asp Ala Asp Ser Gly Ala | 620 | 625 | 630 |
| Asn Gly Glu Pro Leu Tyr Ser Ile Arg Asn Gly Asn Glu Ala His | 635 | 640 | 645 |
| Leu Phe Ile Leu Asn Pro His Thr Gly Gln Leu Phe Val Asn Val | 650 | 655 | 660 |
| Thr Asn Ala Ser Ser Leu Ile Gly Ser Glu Trp Glu Leu Glu Ile | 665 | 670 | 675 |
| Val Val Glu Asp Gln Gly Ser Pro Pro Leu Gln Thr Arg Ala Leu | 680 | 685 | 690 |
| Leu Arg Val Met Phe Val Thr Ser Val Asp His Leu Arg Asp Ser | 695 | 700 | 705 |
| Ala Arg Lys Pro Gly Ala Leu Ser Met Ser Met Leu Thr Val Ile | 710 | 715 | 720 |
| Cys Leu Ala Val Leu Leu Gly Ile Phe Gly Leu Ile Leu Ala Leu | 725 | 730 | 735 |
| Phe Met Ser Ile Cys Arg Thr Glu Lys Lys Asp Asn Arg Ala Tyr | 740 | 745 | 750 |
| Asn Cys Arg Glu Ala Glu Ser Thr Tyr Arg Gln Gln Pro Lys Arg | 755 | 760 | 765 |
| Pro Gln Lys His Ile Gln Lys Ala Asp Ile His Leu Val Pro Val | 770 | 775 | 780 |
| Leu Arg Gly Gln Ala Gly Glu Pro Cys Glu Val Gly Gln Ser His | 785 | 790 | 795 |
| Lys Asp Val Asp Lys Glu Ala Met Met Glu Ala Gly Trp Asp Pro | 800 | 805 | 810 |
| Cys Leu Gln Ala Pro Phe His Leu Thr Pro Thr Leu Tyr Arg Thr | 815 | 820 | 825 |
| Leu Arg Asn Gln Gly Asn Gln Gly Ala Pro Ala Glu Ser Arg Glu | 830 | 835 | 840 |
| Val Leu Gln Asp Thr Val Asn Leu Leu Phe Asn His Pro Arg Gln | 845 | 850 | 855 |
| Arg Asn Ala Ser Arg Glu Asn Leu Asn Leu Pro Glu Pro Gln Pro | 860 | 865 | 870 |

| | | | |
|---|------|------|------|
| Ala Thr Gly Gln Pro Arg Ser Arg Pro Leu Lys Val Ala Gly Ser | 875 | 880 | 885 |
| Pro Thr Gly Arg Leu Ala Gly Asp Gln Gly Ser Glu Glu Ala Pro | 890 | 895 | 900 |
| Gln Arg Pro Pro Ala Ser Ser Ala Thr Leu Arg Arg Gln Arg His | 905 | 910 | 915 |
| Leu Asn Gly Lys Val Ser Pro Glu Lys Glu Ser Gly Pro Arg Gln | 920 | 925 | 930 |
| Ile Leu Arg Ser Leu Val Arg Leu Ser Val Ala Ala Phe Ala Glu | 935 | 940 | 945 |
| Arg Asn Pro Val Glu Glu Leu Thr Val Asp Ser Pro Pro Val Gln | 950 | 955 | 960 |
| Gln Ile Ser Gln Leu Leu Ser Leu Leu His Gln Gly Gln Phe Gln | 965 | 970 | 975 |
| Pro Lys Pro Asn His Arg Gly Asn Lys Tyr Leu Ala Lys Pro Gly | 980 | 985 | 990 |
| Gly Ser Arg Ser Ala Ile Pro Asp Thr Asp Gly Pro Ser Ala Arg | 995 | 1000 | 1005 |
| Ala Gly Gly Gln Thr Asp Pro Glu Gln Glu Glu Gly Pro Leu Asp | 1010 | 1015 | 1020 |
| Pro Glu Glu Asp Leu Ser Val Lys Gln Leu Leu Glu Glu Glu Leu | 1025 | 1030 | 1035 |
| Ser Ser Leu Leu Asp Pro Ser Thr Gly Leu Ala Leu Asp Arg Leu | 1040 | 1045 | 1050 |
| Ser Ala Pro Asp Pro Ala Trp Met Ala Arg Leu Ser Leu Pro Leu | 1055 | 1060 | 1065 |
| Thr Thr Asn Tyr Arg Asp Asn Val Ile Ser Pro Asp Ala Ala Ala | 1070 | 1075 | 1080 |
| Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala | 1085 | 1090 | 1095 |
| Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val | 1100 | 1105 | 1110 |
| Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser | 1115 | 1120 | 1125 |
| Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser | 1130 | 1135 | 1140 |
| Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala | 1145 | 1150 | 1155 |

Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr
1160 1165 1170

Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Arg Cys Leu
1175 1180

<210> 426

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 426

gtaagcacat gcctccagag gtgc 24

<210> 427

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 427

gtgacgtgga tgcttgggat gttg 24

<210> 428

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 428

tggacacctt cagtattgat gccaaagacag gccaggtcat tctgcgtcga 50

<210> 429

<211> 2037

<212> DNA

<213> Homo sapiens

<400> 429

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cctgggagaa ggcagaccgt gtgagggggc ctgtggcccc agcgtgctgt 100

ggcctcgggg agtgggaagt ggaggcagga gccttcctta cacttcgcca 150

tgagtttcct catcgactcc agcatcatga ttacctocca gatactattt 200

tttgattttg ggtggctttt cttcatgcgc caattgttta aagactatga 250

gatacgtcag tatgttgtac aggtgatcct ctccgtgacg ttgtcatttt 300

cttgccacat gtttgagctc atcatctttg aaatcttagg agtattgaat 350
agcagctccc gttattttca ctggaaaatg aacctgtgtg taattctgct 400
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atatccgact actgcataaa caacgactgc ttttttctg tctcttatgg 500
ctgaccttta tgtatttctt ctggaaacta ggagatccct ttcccattct 550
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 aaaaaaaaaa agggcggccg cgactctaga gtcgacctgc agaagcttgg 2000
 ccgccatggc ccaacttggt tattgcagct tataatg 2037

<210> 430

<211> 455

<212> PRT

<213> Homo sapiens

<400> 430

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ser | Phe | Leu | Ile | Asp | Ser | Ser | Ile | Met | Ile | Thr | Ser | Gln | Ile | 1 | 5 | 10 | 15 |
| Leu | Phe | Phe | Gly | Phe | Gly | Trp | Leu | Phe | Phe | Met | Arg | Gln | Leu | Phe | 20 | 25 | 30 | |
| Lys | Asp | Tyr | Glu | Ile | Arg | Gln | Tyr | Val | Val | Gln | Val | Ile | Phe | Ser | 35 | 40 | 45 | |
| Val | Thr | Phe | Ala | Phe | Ser | Cys | Thr | Met | Phe | Glu | Leu | Ile | Ile | Phe | 50 | 55 | 60 | |
| Glu | Ile | Leu | Gly | Val | Leu | Asn | Ser | Ser | Ser | Arg | Tyr | Phe | His | Trp | 65 | 70 | 75 | |
| Lys | Met | Asn | Leu | Cys | Val | Ile | Leu | Leu | Ile | Leu | Val | Phe | Met | Val | 80 | 85 | 90 | |
| Pro | Phe | Tyr | Ile | Gly | Tyr | Phe | Ile | Val | Ser | Asn | Ile | Arg | Leu | Leu | 95 | 100 | 105 | |
| His | Lys | Gln | Arg | Leu | Leu | Phe | Ser | Cys | Leu | Leu | Trp | Leu | Thr | Phe | 110 | 115 | 120 | |
| Met | Tyr | Phe | Phe | Trp | Lys | Leu | Gly | Asp | Pro | Phe | Pro | Ile | Leu | Ser | 125 | 130 | 135 | |
| Pro | Lys | His | Gly | Ile | Leu | Ser | Ile | Glu | Gln | Leu | Ile | Ser | Arg | Val | 140 | 145 | 150 | |
| Gly | Val | Ile | Gly | Val | Thr | Leu | Met | Ala | Leu | Leu | Ser | Gly | Phe | Gly | 155 | 160 | 165 | |
| Ala | Val | Asn | Cys | Pro | Tyr | Thr | Tyr | Met | Ser | Tyr | Phe | Leu | Arg | Asn | 170 | 175 | 180 | |
| Val | Thr | Asp | Thr | Asp | Ile | Leu | Ala | Leu | Glu | Arg | Arg | Leu | Leu | Gln | | | | |

| | 185 | 190 | 195 |
|-----------------|---------------------|---------------------|-----|
| Thr Met Asp Met | Ile Ile Ser Lys Lys | Lys Arg Met Ala Met | Ala |
| | 200 | 205 | 210 |
| Arg Arg Thr Met | Phe Gln Lys Gly Glu | Val His Asn Lys Pro | Ser |
| | 215 | 220 | 225 |
| Gly Phe Trp Gly | Met Ile Lys Ser Val | Thr Thr Ser Ala Ser | Gly |
| | 230 | 235 | 240 |
| Ser Glu Asn Leu | Thr Leu Ile Gln Gln | Glu Val Asp Ala Leu | Glu |
| | 245 | 250 | 255 |
| Glu Leu Ser Arg | Gln Leu Phe Leu Glu | Thr Ala Asp Leu Tyr | Ala |
| | 260 | 265 | 270 |
| Thr Lys Glu Arg | Ile Glu Tyr Ser Lys | Thr Phe Lys Gly Lys | Tyr |
| | 275 | 280 | 285 |
| Phe Asn Phe Leu | Gly Tyr Phe Phe Ser | Ile Tyr Cys Val Trp | Lys |
| | 290 | 295 | 300 |
| Ile Phe Met Ala | Thr Ile Asn Ile Val | Phe Asp Arg Val Gly | Lys |
| | 305 | 310 | 315 |
| Thr Asp Pro Val | Thr Arg Gly Ile Glu | Ile Thr Val Asn Tyr | Leu |
| | 320 | 325 | 330 |
| Gly Ile Gln Phe | Asp Val Lys Phe Trp | Ser Gln His Ile Ser | Phe |
| | 335 | 340 | 345 |
| Ile Leu Val Gly | Ile Ile Ile Val Thr | Ser Ile Arg Gly Leu | Leu |
| | 350 | 355 | 360 |
| Ile Thr Leu Thr | Lys Phe Phe Tyr Ala | Ile Ser Ser Ser Lys | Ser |
| | 365 | 370 | 375 |
| Ser Asn Val Ile | Val Leu Leu Leu Ala | Gln Ile Met Gly Met | Tyr |
| | 380 | 385 | 390 |
| Phe Val Ser Ser | Val Leu Leu Ile Arg | Met Ser Met Pro Leu | Glu |
| | 395 | 400 | 405 |
| Tyr Arg Thr Ile | Ile Thr Glu Val Leu | Gly Glu Leu Gln Phe | Asn |
| | 410 | 415 | 420 |
| Phe Tyr His Arg | Trp Phe Asp Val Ile | Phe Leu Val Ser Ala | Leu |
| | 425 | 430 | 435 |
| Ser Ser Ile Leu | Phe Leu Tyr Leu Ala | His Lys Gln Ala Pro | Glu |
| | 440 | 445 | 450 |
| Lys Gln Met Ala | Pro | | |
| | 455 | | |

<211> 407
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 78, 81, 113, 157, 224, 297
<223> unknown base

<400> 431
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tcgactccag catcatgatt acctcccnga nactatTTTT tggatttggg 100
tggcttttct tcnngcggaa tgttttaaaga ctatgagata cgtcagtatg 150
ttgtacnggt gatcttctcc gtgacgtttg ccatttcttg caccatgttt 200
gagctcatca tctttgaaat cttnngagta ttgaatagca gctcccgta 250
ttttcactgg aaaatgaacc tgtgtgtaat tctgctgata ctggttntca 300
tggtgccttt ttacattggc tattttattg tgagcaatat ccgactactg 350
cataaacaac gactgctttt ttctgtctc ttatggctga cctttatgta 400
tttccag 407

<210> 432
<211> 457
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 31, 66, 81-82, 84, 122, 184, 187, 232, 241, 400, 424, 427, 434
<223> unknown base

<400> 432
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ctatgagata cgtcagtatg ttgtacaggt gatnttntcc gtgacgtttg 200
cattttcttg caccatgttt gagctcatca tntttgaaat nttaggagta 250
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tctgctgata ctggttttca tggtgccttt ttacattggc tattttattg 350
tgagcaatat ccgactactg cataaacaac gactgctttt ttctgtctn 400
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cattctc 457

<210> 433

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 433

aagtggagcc ggagccttcc 20

<210> 434

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 434

tcgttgttta tgcagtagtc gg 22

<210> 435

<211> 41

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 435

attgtttaaa gactatgaga tacgtcagta tgttgtagac g 41

<210> 436

<211> 3951

<212> DNA

<213> Homo sapiens

<400> 436

ctcgcgcagg gatcgtccca tggccggggc tcggagccgc gacccttggg 50

gggcctccgg gatttgctac ctttttggct cctgtctcgt cgaactgctc 100

ttctcacggg ctgtcgcctt caatctggac gtgatgggtg ccttgcgcaa 150

ggagggcgag ccaggcagcc tcttcggctt ctctgtggcc ctgcaccggc 200

agttgcagcc ccgaccccag agctggctgc tgggtgggtgc tccccaggcc 250

ctggctcttc ctgggcagca ggcgaaatcgc actggaggcc tcttcgcttg 300

cccgttgagc ctggaggaga ctgactgcta cagagtggac atcgaccagg 350

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<210> 437

<211> 1141

<212> PRT

<213> Homo sapiens

<400> 437

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ala | Arg | Ser | Arg | Asp | Pro | Trp | Gly | Ala | Ser | Gly | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Tyr | Leu | Phe | Gly | Ser | Leu | Leu | Val | Glu | Leu | Leu | Phe | Ser | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Ala | Phe | Asn | Leu | Asp | Val | Met | Gly | Ala | Leu | Arg | Lys | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Pro | Gly | Ser | Leu | Phe | Gly | Phe | Ser | Val | Ala | Leu | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Gln | Pro | Arg | Pro | Gln | Ser | Trp | Leu | Leu | Val | Gly | Ala | Pro |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ala | Leu | Ala | Leu | Pro | Gly | Gln | Gln | Ala | Asn | Arg | Thr | Gly | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Phe | Ala | Cys | Pro | Leu | Ser | Leu | Glu | Glu | Thr | Asp | Cys | Tyr | Arg |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | |
|-----------------|---------------------|-------------------------|
| Val Asp Ile Asp | Gln Gly Ala Asp Met | Gln Lys Glu Ser Lys Glu |
| 110 | 115 | 120 |
| Asn Gln Trp Leu | Gly Val Ser Val Arg | Ser Gln Gly Pro Gly Gly |
| 125 | 130 | 135 |
| Lys Ile Val Thr | Cys Ala His Arg Tyr | Glu Ala Arg Gln Arg Val |
| 140 | 145 | 150 |
| Asp Gln Ile Leu | Glu Thr Arg Asp Met | Ile Gly Arg Cys Phe Val |
| 155 | 160 | 165 |
| Leu Ser Gln Asp | Leu Ala Ile Arg Asp | Glu Leu Asp Gly Gly Glu |
| 170 | 175 | 180 |
| Trp Lys Phe Cys | Glu Gly Arg Pro Gln | Gly His Glu Gln Phe Gly |
| 185 | 190 | 195 |
| Phe Cys Gln Gln | Gly Thr Ala Ala Ala | Phe Ser Pro Asp Ser His |
| 200 | 205 | 210 |
| Tyr Leu Leu Phe | Gly Ala Pro Gly Thr | Tyr Asn Trp Lys Gly Thr |
| 215 | 220 | 225 |
| Ala Arg Val Glu | Leu Cys Ala Gln Gly | Ser Ala Asp Leu Ala His |
| 230 | 235 | 240 |
| Leu Asp Asp Gly | Pro Tyr Glu Ala Gly | Gly Glu Lys Glu Gln Asp |
| 245 | 250 | 255 |
| Pro Arg Leu Ile | Pro Val Pro Ala Asn | Ser Tyr Phe Gly Phe Ser |
| 260 | 265 | 270 |
| Ile Asp Ser Gly | Lys Gly Leu Val Arg | Ala Glu Glu Leu Ser Phe |
| 275 | 280 | 285 |
| Val Ala Gly Ala | Pro Arg Ala Asn His | Lys Gly Ala Val Val Ile |
| 290 | 295 | 300 |
| Leu Arg Lys Asp | Ser Ala Ser Arg Leu | Val Pro Glu Val Met Leu |
| 305 | 310 | 315 |
| Ser Gly Glu Arg | Leu Thr Ser Gly Phe | Gly Tyr Ser Leu Ala Val |
| 320 | 325 | 330 |
| Ala Asp Leu Asn | Ser Asp Gly Trp Pro | Asp Leu Ile Val Gly Ala |
| 335 | 340 | 345 |
| Pro Tyr Phe Phe | Glu Arg Gln Glu Glu | Leu Gly Gly Ala Val Tyr |
| 350 | 355 | 360 |
| Val Tyr Leu Asn | Gln Gly Gly His Trp | Ala Gly Ile Ser Pro Leu |
| 365 | 370 | 375 |
| Arg Leu Cys Gly | Ser Pro Asp Ser Met | Phe Gly Ile Ser Leu Ala |
| 380 | 385 | 390 |

| | | | | | |
|-----------------|-------------------------|-------------------------|-----|-----|-----|
| Val Leu Gly Asp | Leu Asn Gln Asp Gly | Phe Pro Asp Ile Ala Val | 395 | 400 | 405 |
| Gly Ala Pro Phe | Asp Gly Asp Gly Lys Val | Phe Ile Tyr His Gly | 410 | 415 | 420 |
| Ser Ser Leu Gly | Val Val Ala Lys Pro Ser | Gln Val Leu Glu Gly | 425 | 430 | 435 |
| Glu Ala Val Gly | Ile Lys Ser Phe Gly Tyr | Ser Leu Ser Gly Ser | 440 | 445 | 450 |
| Leu Asp Met Asp | Gly Asn Gln Tyr Pro Asp | Leu Leu Val Gly Ser | 455 | 460 | 465 |
| Leu Ala Asp Thr | Ala Val Leu Phe Arg Ala | Arg Pro Ile Leu His | 470 | 475 | 480 |
| Val Ser His Glu | Val Ser Ile Ala Pro Arg | Ser Ile Asp Leu Glu | 485 | 490 | 495 |
| Gln Pro Asn Cys | Ala Gly Gly His Ser Val | Cys Val Asp Leu Arg | 500 | 505 | 510 |
| Val Cys Phe Ser | Tyr Ile Ala Val Pro Ser | Ser Tyr Ser Pro Thr | 515 | 520 | 525 |
| Val Ala Leu Asp | Tyr Val Leu Asp Ala Asp | Thr Asp Arg Arg Leu | 530 | 535 | 540 |
| Arg Gly Gln Val | Pro Arg Val Thr Phe Leu | Ser Arg Asn Leu Glu | 545 | 550 | 555 |
| Glu Pro Lys His | Gln Ala Ser Gly Thr Val | Trp Leu Lys His Gln | 560 | 565 | 570 |
| His Asp Arg Val | Cys Gly Asp Ala Met Phe | Gln Leu Gln Glu Asn | 575 | 580 | 585 |
| Val Lys Asp Lys | Leu Arg Ala Ile Val Val | Thr Leu Ser Tyr Ser | 590 | 595 | 600 |
| Leu Gln Thr Pro | Arg Leu Arg Arg Gln Ala | Pro Gly Gln Gly Leu | 605 | 610 | 615 |
| Pro Pro Val Ala | Pro Ile Leu Asn Ala His | Gln Pro Ser Thr Gln | 620 | 625 | 630 |
| Arg Ala Glu Ile | His Phe Leu Lys Gln Gly | Cys Gly Glu Asp Lys | 635 | 640 | 645 |
| Ile Cys Gln Ser | Asn Leu Gln Leu Val His | Ala Arg Phe Cys Thr | 650 | 655 | 660 |
| Arg Val Ser Asp | Thr Glu Phe Gln Pro Leu | Pro Met Asp Val Asp | 665 | 670 | 675 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Gly Thr Thr Ala | Leu Phe Ala Leu Ser | Gly Gln Pro Val Ile Gly | 680 | 685 | 690 |
| Leu Glu Leu Met | Val Thr Asn Leu Pro | Ser Asp Pro Ala Gln Pro | 695 | 700 | 705 |
| Gln Ala Asp Gly | Asp Asp Ala His Glu | Ala Gln Leu Leu Val Met | 710 | 715 | 720 |
| Leu Pro Asp Ser | Leu His Tyr Ser Gly | Val Arg Ala Leu Asp Pro | 725 | 730 | 735 |
| Ala Glu Lys Pro | Leu Cys Leu Ser Asn | Glu Asn Ala Ser His Val | 740 | 745 | 750 |
| Glu Cys Glu Leu | Gly Asn Pro Met Lys | Arg Gly Ala Gln Val Thr | 755 | 760 | 765 |
| Phe Tyr Leu Ile | Leu Ser Thr Ser Gly | Ile Ser Ile Glu Thr Thr | 770 | 775 | 780 |
| Glu Leu Glu Val | Glu Leu Leu Leu Ala | Thr Ile Ser Glu Gln Glu | 785 | 790 | 795 |
| Leu His Pro Val | Ser Ala Arg Ala Arg | Val Phe Ile Glu Leu Pro | 800 | 805 | 810 |
| Leu Ser Ile Ala | Gly Met Ala Ile Pro | Gln Gln Leu Phe Phe Ser | 815 | 820 | 825 |
| Gly Val Val Arg | Gly Glu Arg Ala Met | Gln Ser Glu Arg Asp Val | 830 | 835 | 840 |
| Gly Ser Lys Val | Lys Tyr Glu Val Thr | Val Ser Asn Gln Gly Gln | 845 | 850 | 855 |
| Ser Leu Arg Thr | Leu Gly Ser Ala Phe | Leu Asn Ile Met Trp Pro | 860 | 865 | 870 |
| His Glu Ile Ala | Asn Gly Lys Trp Leu | Leu Tyr Pro Met Gln Val | 875 | 880 | 885 |
| Glu Leu Glu Gly | Gly Gln Gly Pro Gly | Gln Lys Gly Leu Cys Ser | 890 | 895 | 900 |
| Pro Arg Pro Asn | Ile Leu His Leu Asp | Val Asp Ser Arg Asp Arg | 905 | 910 | 915 |
| Arg Arg Arg Glu | Leu Glu Pro Pro Glu | Gln Gln Glu Pro Gly Glu | 920 | 925 | 930 |
| Arg Gln Glu Pro | Ser Met Ser Trp Trp | Pro Val Ser Ser Ala Glu | 935 | 940 | 945 |
| Lys Lys Lys Asn | Ile Thr Leu Asp Cys | Ala Arg Gly Thr Ala Asn | 950 | 955 | 960 |

| | | | |
|---|------|------|------|
| Cys Val Val Phe Ser Cys Pro Leu Tyr Ser Phe Asp Arg Ala Ala | 965 | 970 | 975 |
| Val Leu His Val Trp Gly Arg Leu Trp Asn Ser Thr Phe Leu Glu | 980 | 985 | 990 |
| Glu Tyr Ser Ala Val Lys Ser Leu Glu Val Ile Val Arg Ala Asn | 995 | 1000 | 1005 |
| Ile Thr Val Lys Ser Ser Ile Lys Asn Leu Met Leu Arg Asp Ala | 1010 | 1015 | 1020 |
| Ser Thr Val Ile Pro Val Met Val Tyr Leu Asp Pro Met Ala Val | 1025 | 1030 | 1035 |
| Val Ala Glu Gly Val Pro Trp Trp Val Ile Leu Leu Ala Val Leu | 1040 | 1045 | 1050 |
| Ala Gly Leu Leu Val Leu Ala Leu Leu Val Leu Leu Leu Trp Lys | 1055 | 1060 | 1065 |
| Met Gly Phe Phe Lys Arg Ala Lys His Pro Glu Ala Thr Val Pro | 1070 | 1075 | 1080 |
| Gln Tyr His Ala Val Lys Ile Pro Arg Glu Asp Arg Gln Gln Phe | 1085 | 1090 | 1095 |
| Lys Glu Glu Lys Thr Gly Thr Ile Leu Arg Asn Asn Trp Gly Ser | 1100 | 1105 | 1110 |
| Pro Arg Arg Glu Gly Pro Asp Ala His Pro Ile Leu Ala Ala Asp | 1115 | 1120 | 1125 |
| Gly His Pro Glu Leu Gly Pro Asp Gly His Pro Gly Pro Gly Thr | 1130 | 1135 | 1140 |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 438

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<210> 439

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 439

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<210> 440

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 440

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<210> 441

<211> 1964

<212> DNA

<213> Homo sapiens

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 aaaaaaaaaa aaaa 1964

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<211> 436

<212> PRT

<213> Homo sapiens

<400> 442

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Lys | Val | Ser | Ala | Val | Leu | Cys | Val | Cys | Ala | Ala | Ala | Trp |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ser | Gln | Ser | Leu | Ala | Ala | Ala | Ala | Ala | Val | Ala | Ala | Ala | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |

Gly Arg Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu

| 35 | | | | | | | | | | 40 | | | | | 45 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Thr | Thr | Ile | Ser | Gln | Tyr | Asp | Lys | Glu | Val | Gly | Gln | Trp | Asn | Lys | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Phe | Arg | Asp | Glu | Val | Glu | Asp | Asp | Tyr | Phe | Arg | Thr | Trp | Ser | Pro | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Gly | Lys | Pro | Phe | Asp | Gln | Ala | Leu | Asp | Pro | Ala | Lys | Asp | Pro | Cys | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Leu | Lys | Met | Lys | Cys | Ser | Arg | His | Lys | Val | Cys | Ile | Ala | Gln | Asp | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Ser | Gln | Thr | Ala | Val | Cys | Ile | Ser | His | Arg | Arg | Leu | Thr | His | Arg | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Met | Lys | Glu | Ala | Gly | Val | Asp | His | Arg | Gln | Trp | Arg | Gly | Pro | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Leu | Ser | Thr | Cys | Lys | Gln | Cys | Pro | Val | Val | Tyr | Pro | Ser | Pro | Val | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Cys | Gly | Ser | Asp | Gly | His | Thr | Tyr | Ser | Phe | Gln | Cys | Lys | Leu | Glu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Tyr | Gln | Ala | Cys | Val | Leu | Gly | Lys | Gln | Ile | Ser | Val | Lys | Cys | Glu | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gly | His | Cys | Pro | Cys | Pro | Ser | Asp | Lys | Pro | Thr | Ser | Thr | Ser | Arg | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Asn | Val | Lys | Arg | Ala | Cys | Ser | Asp | Leu | Glu | Phe | Arg | Glu | Val | Ala | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Asn | Arg | Leu | Arg | Asp | Trp | Phe | Lys | Ala | Leu | His | Glu | Ser | Gly | Ser | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Gln | Asn | Lys | Lys | Thr | Lys | Thr | Leu | Leu | Arg | Pro | Glu | Arg | Ser | Arg | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Asp | Thr | Ser | Ile | Leu | Pro | Ile | Cys | Lys | Asp | Ser | Leu | Gly | Trp | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Met | Phe | Asn | Arg | Leu | Asp | Thr | Asn | Tyr | Asp | Leu | Leu | Leu | Asp | Gln | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ser | Glu | Leu | Arg | Ser | Ile | Tyr | Leu | Asp | Lys | Asn | Glu | Gln | Cys | Thr | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Lys | Ala | Phe | Phe | Asn | Ser | Cys | Asp | Thr | Tyr | Lys | Asp | Ser | Leu | Ile | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ser | Asn | Asn | Glu | Trp | Cys | Tyr | Cys | Phe | Gln | Arg | Gln | Gln | Asp | Pro | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Pro | Cys | Gln | Thr | Glu | Leu | Ser | Asn | Ile | Gln | Lys | Arg | Gln | Gly | Val | | | | | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 320 | | 325 | | 330 |
| Lys Lys Leu Leu | Gly Gln Tyr Ile Pro | Leu Cys Asp Glu Asp Gly | | | |
| | 335 | 340 | | | 345 |
| Tyr Tyr Lys Pro | Thr Gln Cys His Gly | Ser Val Gly Gln Cys Trp | | | |
| | 350 | 355 | | | 360 |
| Cys Val Asp Arg | Tyr Gly Asn Glu Val | Met Gly Ser Arg Ile Asn | | | |
| | 365 | 370 | | | 375 |
| Gly Val Ala Asp | Cys Ala Ile Asp Phe | Glu Ile Ser Gly Asp Phe | | | |
| | 380 | 385 | | | 390 |
| Ala Ser Gly Asp | Phe His Glu Trp Thr | Asp Asp Glu Asp Asp Glu | | | |
| | 395 | 400 | | | 405 |
| Asp Asp Ile Met | Asn Asp Glu Asp Glu | Ile Glu Asp Asp Asp Glu | | | |
| | 410 | 415 | | | 420 |
| Asp Glu Gly Asp | Asp Asp Asp Gly Gly | Asp Asp His Asp Val Tyr | | | |
| | 425 | 430 | | | 435 |

Ile

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<211> 25

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 443

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<210> 444

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 444

catcatggtc atcaccacca tcatcatc 28

<210> 445

<211> 48

<212> DNA

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<400> 445

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<210> 446

<211> 3617

<212> DNA

<213> Homo sapiens

<400> 446

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gctctgcctc cgggtgctgct gcctggggcg gccgggttca caccttccct 200
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ctgaagttgg tgattacatg ttctgctttg acaatacatt cagcaccatt 450
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ggcacaagaa caagaagatt ggaagaaata tattactggc acagatatat 550
tggatatgaa actggaagac atcctggaat ccatcaacag catcaagtcc 600
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atgctgaaga gtctgtttga agataagagg aaaagtagaa cttaaaactc 800
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 gtacaataat gcacaatcag tttgtctcaa actgctttat acttataaac 3550
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<210> 447

<211> 229

<212> PRT

<213> Homo sapiens

<400> 447

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| Met | Gly | Asp | Lys | Ile | Trp | Leu | Pro | Phe | Pro | Val | Leu | Leu | Leu | Ala |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Leu | Pro | Pro | Val | Leu | Leu | Pro | Gly | Ala | Ala | Gly | Phe | Thr | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Asp | Ser | Asp | Phe | Thr | Phe | Thr | Leu | Pro | Ala | Gly | Gln | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Cys | Phe | Tyr | Gln | Pro | Met | Pro | Leu | Lys | Ala | Ser | Leu | Glu | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Tyr | Gln | Val | Leu | Asp | Gly | Ala | Gly | Leu | Asp | Ile | Asp | Phe | His |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Ala | Ser | Pro | Glu | Gly | Lys | Thr | Leu | Val | Phe | Glu | Gln | Arg | Lys |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Asp | Gly | Val | His | Thr | Val | Glu | Thr | Glu | Val | Gly | Asp | Tyr | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Phe | Cys | Phe | Asp | Asn | Thr | Phe | Ser | Thr | Ile | Ser | Glu | Lys | Val | Ile |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Phe | Phe | Glu | Leu | Ile | Leu | Asp | Asn | Met | Gly | Glu | Gln | Ala | Gln | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gln | Glu | Asp | Trp | Lys | Lys | Tyr | Ile | Thr | Gly | Thr | Asp | Ile | Leu | Asp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Met | Lys | Leu | Glu | Asp | Ile | Leu | Glu | Ser | Ile | Asn | Ser | Ile | Lys | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Arg | Leu | Ser | Lys | Ser | Gly | His | Ile | Gln | Ile | Leu | Leu | Arg | Ala | Phe |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Glu | Ala | Arg | Asp | Arg | Asn | Ile | Gln | Glu | Ser | Asn | Phe | Asp | Arg | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Asn | Phe | Trp | Ser | Met | Val | Asn | Leu | Val | Val | Met | Val | Val | Val | Ser |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ala | Ile | Gln | Val | Tyr | Met | Leu | Lys | Ser | Leu | Phe | Glu | Asp | Lys | Arg |
| | | | | 215 | | | | | 220 | | | | | 225 |

Lys Ser Arg Thr

<210> 448

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 448

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<210> 449

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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gtcttccagt ttcatatcca ata 23

<210> 450

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 450

ccagaaggag cacggggaag ggcagccaga tcttgtcgcc cat 43

<210> 451

<211> 859

<212> DNA

<213> Homo sapiens

<400> 451

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gccctgcccc gtgtgtcctg gatgctgctt tcttgccctca ttctcctgtg 150
tcaggttcaa ggtgaagaaa ccagaagga actgccctct ccacggatca 200
gctgtcccaa aggctccaag gcctatggct cccctgcta tgcttgttt 250
ttgtcaccaa aatcctggat ggatgcagat ctggcttgcc agaagcggcc 300
ctctggaaaa ctggtgtctg tgctcagtgg ggctgaggga tccttcgtgt 350
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ccatcttaaa ccctggccac tgtgggagcc tgtcaagaag cacaggattt 550
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gttcaaggac tagggcaggt ggggaagtcag cagcctcagc ttggcgtgca 650
gtcatcatg gacatgagac cagtgtgaag actcaccctg gaagagaata 700
ttctcccaa actgccctac ctgactacct tgcatgata ctccttcttt 750
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aaaaaaaaa 859

<210> 452

<211> 175

<212> PRT

<213> Homo sapiens

<400> 452

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Leu | Pro | Pro | Met | Ala | Leu | Pro | Ser | Val | Ser | Trp | Met | Leu | Leu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ser | Cys | Leu | Ile | Leu | Leu | Cys | Gln | Val | Gln | Gly | Glu | Glu | Thr | Gln | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Lys | Glu | Leu | Pro | Ser | Pro | Arg | Ile | Ser | Cys | Pro | Lys | Gly | Ser | Lys | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Ala | Tyr | Gly | Ser | Pro | Cys | Tyr | Ala | Leu | Phe | Leu | Ser | Pro | Lys | Ser | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Trp | Met | Asp | Ala | Asp | Leu | Ala | Cys | Gln | Lys | Arg | Pro | Ser | Gly | Lys | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Leu | Val | Ser | Val | Leu | Ser | Gly | Ala | Glu | Gly | Ser | Phe | Val | Ser | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Val | Arg | Ser | Ile | Ser | Asn | Ser | Tyr | Ser | Tyr | Ile | Trp | Ile | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | His | Asp | Pro | Thr | Gln | Gly | Ser | Glu | Pro | Asp | Gly | Asp | Gly | Trp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Glu | Trp | Ser | Ser | Thr | Asp | Val | Met | Asn | Tyr | Phe | Ala | Trp | Glu | Lys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asn | Pro | Ser | Thr | Ile | Leu | Asn | Pro | Gly | His | Cys | Gly | Ser | Leu | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Ser | Thr | Gly | Phe | Leu | Lys | Trp | Lys | Asp | Tyr | Asn | Cys | Asp | Ala | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Leu | Pro | Tyr | Val | Cys | Lys | Phe | Lys | Asp | | | | | | |
| | | | | 170 | | | | | 175 | | | | | | |

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<211> 550

<212> DNA

<213> Homo sapiens

<400> 453

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atcgccacct gcaccaccaa cgaaaccatg tgcaagacca cactctactc 250

ccgggagata gtgtaccctt tccaggggga ctccacggtg accaagtcct 300

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cccgtgtcct gctgcaatac tgagctgtgc aatgtagacg gggcgcccg 400
tctgaacagc ctccactgcg gggccctcac gctcctccca ctcttgagcc 450
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<210> 454
<211> 125
<212> PRT
<213> Homo sapiens

<400> 454
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Cys Gly Glu Leu Ala Pro Ala Leu Arg Cys Tyr Val Cys Pro Glu
20 25 30
Pro Thr Gly Val Ser Asp Cys Val Thr Ile Ala Thr Cys Thr Thr
35 40 45
Asn Glu Thr Met Cys Lys Thr Thr Leu Tyr Ser Arg Glu Ile Val
50 55 60
Tyr Pro Phe Gln Gly Asp Ser Thr Val Thr Lys Ser Cys Ala Ser
65 70 75
Lys Cys Lys Pro Ser Asp Val Asp Gly Ile Gly Gln Thr Leu Pro
80 85 90
Val Ser Cys Cys Asn Thr Glu Leu Cys Asn Val Asp Gly Ala Pro
95 100 105
Ala Leu Asn Ser Leu His Cys Gly Ala Leu Thr Leu Leu Pro Leu
110 115 120
Leu Ser Leu Arg Leu
125

<210> 455
<211> 1518
<212> DNA
<213> Homo sapiens

<400> 455
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gcgcagcggg agctaccggg gtctttgtcg cgatggtagc ggcggctctc 200

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 aataagtacc agaccattga caactaccag ccgtaccctg gcgcagagga 400
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 atgtaacatg aaaatactag cttattttct gaaatgtact atcttaatgc 1450
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 catttaaaaa aaaaaaaaa 1518

<210> 456

<211> 266

<212> PRT
<213> Homo sapiens

<400> 456

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Ala | Leu | Gly | Ala | Ala | Gly | Ala | Thr | Arg | Val | Phe | Val | Ala |
| 1 | | | 5 | | | | | | 10 | | | | | 15 |
| Met | Val | Ala | Ala | Ala | Leu | Gly | Gly | His | Pro | Leu | Leu | Gly | Val | Ser |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ala | Thr | Leu | Asn | Ser | Val | Leu | Asn | Ser | Asn | Ala | Ile | Lys | Asn | Leu |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Pro | Pro | Pro | Leu | Gly | Gly | Ala | Ala | Gly | His | Pro | Gly | Ser | Ala | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Ser | Ala | Ala | Pro | Gly | Ile | Leu | Tyr | Pro | Gly | Gly | Asn | Lys | Tyr | Gln |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Thr | Ile | Asp | Asn | Tyr | Gln | Pro | Tyr | Pro | Cys | Ala | Glu | Asp | Glu | Glu |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Cys | Gly | Thr | Asp | Glu | Tyr | Cys | Ala | Ser | Pro | Thr | Arg | Gly | Gly | Asp |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Ala | Gly | Val | Gln | Ile | Cys | Leu | Ala | Cys | Arg | Lys | Arg | Arg | Lys | Arg |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Cys | Met | Arg | His | Ala | Met | Cys | Cys | Pro | Gly | Asn | Tyr | Cys | Lys | Asn |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Gly | Ile | Cys | Val | Ser | Ser | Asp | Gln | Asn | His | Phe | Arg | Gly | Glu | Ile |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Glu | Glu | Thr | Ile | Thr | Glu | Ser | Phe | Gly | Asn | Asp | His | Ser | Thr | Leu |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Asp | Gly | Tyr | Ser | Arg | Arg | Thr | Thr | Leu | Ser | Ser | Lys | Met | Tyr | His |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Thr | Lys | Gly | Gln | Glu | Gly | Ser | Val | Cys | Leu | Arg | Ser | Ser | Asp | Cys |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Ala | Ser | Gly | Leu | Cys | Cys | Ala | Arg | His | Phe | Trp | Ser | Lys | Ile | Cys |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Lys | Pro | Val | Leu | Lys | Glu | Gly | Gln | Val | Cys | Thr | Lys | His | Arg | Arg |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Lys | Gly | Ser | His | Gly | Leu | Glu | Ile | Phe | Gln | Arg | Cys | Tyr | Cys | Gly |
| | | | 230 | | | | | | 235 | | | | | 240 |
| Glu | Gly | Leu | Ser | Cys | Arg | Ile | Gln | Lys | Asp | His | His | Gln | Ala | Ser |
| | | | 245 | | | | | | 250 | | | | | 255 |
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<212> DNA
<213> Homo sapiens

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509, 556
<223> unknown base

<400> 457
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catttttttt tctttctcct tcnggagtcc ttntgagang atggtttttg 150

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ctgaaagctt tggtaatgat catagcacct tggatggg 638

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gggtttgagg atgggggagt agctacagga agcgaccccg cgatggcaag 200

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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Ala Ser Ser Arg Glu Ile Arg Gln Ala Phe Lys Lys Leu Ala Leu
 50 55 60
 Lys Leu His Pro Asp Lys Asn Pro Asn Asn Pro Asn Ala His Gly
 65 70 75

| | | | |
|---|-----|-----|-----|
| Asp Phe Leu Lys Ile Asn Arg Ala Tyr Glu Val Leu Lys Asp Glu | 80 | 85 | 90 |
| Asp Leu Arg Lys Lys Tyr Asp Lys Tyr Gly Glu Lys Gly Leu Glu | 95 | 100 | 105 |
| Asp Asn Gln Gly Gly Gln Tyr Glu Ser Trp Asn Tyr Tyr Arg Tyr | 110 | 115 | 120 |
| Asp Phe Gly Ile Tyr Asp Asp Asp Pro Glu Ile Ile Thr Leu Glu | 125 | 130 | 135 |
| Arg Arg Glu Phe Asp Ala Ala Val Asn Ser Gly Glu Leu Trp Phe | 140 | 145 | 150 |
| Val Asn Phe Tyr Ser Pro Gly Cys Ser His Cys His Asp Leu Ala | 155 | 160 | 165 |
| Pro Thr Trp Arg Asp Phe Ala Lys Glu Val Asp Gly Leu Leu Arg | 170 | 175 | 180 |
| Ile Gly Ala Val Asn Cys Gly Asp Asp Arg Met Leu Cys Arg Met | 185 | 190 | 195 |
| Lys Gly Val Asn Ser Tyr Pro Ser Leu Phe Ile Phe Arg Ser Gly | 200 | 205 | 210 |
| Met Ala Pro Val Lys Tyr His Gly Asp Arg Ser Lys Glu Ser Leu | 215 | 220 | 225 |
| Val Ser Phe Ala Met Gln His Val Arg Ser Thr Val Thr Glu Leu | 230 | 235 | 240 |
| Trp Thr Gly Asn Phe Val Asn Ser Ile Gln Thr Ala Phe Ala Ala | 245 | 250 | 255 |
| Gly Ile Gly Trp Leu Ile Thr Phe Cys Ser Lys Gly Gly Asp Cys | 260 | 265 | 270 |
| Leu Thr Ser Gln Thr Arg Leu Arg Leu Ser Gly Met Leu Phe Leu | 275 | 280 | 285 |
| Asn Ser Leu Asp Ala Lys Glu Ile Tyr Leu Glu Val Ile His Asn | 290 | 295 | 300 |
| Leu Pro Asp Phe Glu Leu Leu Ser Ala Asn Thr Leu Glu Asp Arg | 305 | 310 | 315 |
| Leu Ala His His Arg Trp Leu Leu Phe Phe His Phe Gly Lys Asn | 320 | 325 | 330 |
| Glu Asn Ser Asn Asp Pro Glu Leu Lys Lys Leu Lys Thr Leu Leu | 335 | 340 | 345 |
| Lys Asn Asp His Ile Gln Val Gly Arg Phe Asp Cys Ser Ser Ala | 350 | 355 | 360 |

| | | | |
|---|-----|-----|-----|
| Pro Asp Ile Cys Ser Asn Leu Tyr Val Phe Gln Pro Ser Leu Ala | 365 | 370 | 375 |
| Val Phe Lys Gly Gln Gly Thr Lys Glu Tyr Glu Ile His His Gly | 380 | 385 | 390 |
| Lys Lys Ile Leu Tyr Asp Ile Leu Ala Phe Ala Lys Glu Ser Val | 395 | 400 | 405 |
| Asn Ser His Val Thr Thr Leu Gly Pro Gln Asn Phe Pro Ala Asn | 410 | 415 | 420 |
| Asp Lys Glu Pro Trp Leu Val Asp Phe Phe Ala Pro Trp Cys Pro | 425 | 430 | 435 |
| Pro Cys Arg Ala Leu Leu Pro Glu Leu Arg Arg Ala Ser Asn Leu | 440 | 445 | 450 |
| Leu Tyr Gly Gln Leu Lys Phe Gly Thr Leu Asp Cys Thr Val His | 455 | 460 | 465 |
| Glu Gly Leu Cys Asn Met Tyr Asn Ile Gln Ala Tyr Pro Thr Thr | 470 | 475 | 480 |
| Val Val Phe Asn Gln Ser Asn Ile His Glu Tyr Glu Gly His His | 485 | 490 | 495 |
| Ser Ala Glu Gln Ile Leu Glu Phe Ile Glu Asp Leu Met Asn Pro | 500 | 505 | 510 |
| Ser Val Val Ser Leu Thr Pro Thr Thr Phe Asn Glu Leu Val Thr | 515 | 520 | 525 |
| Gln Arg Lys His Asn Glu Val Trp Met Val Asp Phe Tyr Ser Pro | 530 | 535 | 540 |
| Trp Cys His Pro Cys Gln Val Leu Met Pro Glu Trp Lys Arg Met | 545 | 550 | 555 |
| Ala Arg Thr Leu Thr Gly Leu Ile Asn Val Gly Ser Ile Asp Cys | 560 | 565 | 570 |
| Gln Gln Tyr His Ser Phe Cys Ala Gln Glu Asn Val Gln Arg Tyr | 575 | 580 | 585 |
| Pro Glu Ile Arg Phe Phe Pro Pro Lys Ser Asn Lys Ala Tyr Gln | 590 | 595 | 600 |
| Tyr His Ser Tyr Asn Gly Trp Asn Arg Asp Ala Tyr Ser Leu Arg | 605 | 610 | 615 |
| Ile Trp Gly Leu Gly Phe Leu Pro Gln Val Ser Thr Asp Leu Thr | 620 | 625 | 630 |
| Pro Gln Thr Phe Ser Glu Lys Val Leu Gln Gly Lys Asn His Trp | 635 | 640 | 645 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Ile | Asp | Phe | Tyr | Ala | Pro | Trp | Cys | Gly | Pro | Cys | Gln | Asn | Phe | 650 | 655 | 660 |
| Ala | Pro | Glu | Phe | Glu | Leu | Leu | Ala | Arg | Met | Ile | Lys | Gly | Lys | Val | 665 | 670 | 675 |
| Lys | Ala | Gly | Lys | Val | Asp | Cys | Gln | Ala | Tyr | Ala | Gln | Thr | Cys | Gln | 680 | 685 | 690 |
| Lys | Ala | Gly | Ile | Arg | Ala | Tyr | Pro | Thr | Val | Lys | Phe | Tyr | Phe | Tyr | 695 | 700 | 705 |
| Glu | Arg | Ala | Lys | Arg | Asn | Phe | Gln | Glu | Glu | Gln | Ile | Asn | Thr | Arg | 710 | 715 | 720 |
| Asp | Ala | Lys | Ala | Ile | Ala | Ala | Leu | Ile | Ser | Glu | Lys | Leu | Glu | Thr | 725 | 730 | 735 |
| Leu | Arg | Asn | Gln | Gly | Lys | Arg | Asn | Lys | Asp | Glu | Leu | | | | 740 | 745 | |

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 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 461
 <211> 24
 <212> DNA
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<220>
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<210> 462
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<220>
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<210> 463
 <211> 1818
 <212> DNA

<213> Homo sapiens

<400> 463

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<211> 300

<212> PRT

<213> Homo sapiens

<400> 464

| | | | | | | | | | | | | | | | | | | |
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| Met | Asn | Ile | Ile | Leu | Glu | Ile | Leu | Leu | Leu | Leu | Ile | Thr | Ile | Ile | 1 | 5 | 10 | 15 |
| Tyr | Ser | Tyr | Leu | Glu | Ser | Leu | Val | Lys | Phe | Phe | Ile | Pro | Gln | Arg | 20 | 25 | 30 | |
| Arg | Lys | Ser | Val | Ala | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly | 35 | 40 | 45 | |
| His | Gly | Ile | Gly | Arg | Gln | Thr | Thr | Tyr | Glu | Phe | Ala | Lys | Arg | Gln | 50 | 55 | 60 | |
| Ser | Ile | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | Arg | Gly | Val | Glu | Glu | 65 | 70 | 75 | |
| Thr | Ala | Ala | Glu | Cys | Arg | Lys | Leu | Gly | Val | Thr | Ala | His | Ala | Tyr | 80 | 85 | 90 | |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Glu | Ile | Tyr | Arg | Ser | Leu | Asn | 95 | 100 | 105 | |
| Gln | Val | Lys | Lys | Glu | Val | Gly | Asp | Val | Thr | Ile | Val | Val | Asn | Asn | 110 | 115 | 120 | |
| Ala | Gly | Thr | Val | Tyr | Pro | Ala | Asp | Leu | Leu | Ser | Thr | Lys | Asp | Glu | 125 | 130 | 135 | |
| Glu | Ile | Thr | Lys | Thr | Phe | Glu | Val | Asn | Ile | Leu | Gly | His | Phe | Trp | 140 | 145 | 150 | |
| Ile | Thr | Lys | Ala | Leu | Leu | Pro | Ser | Met | Met | Glu | Arg | Asn | His | Gly | | | | |

| | | | | | |
|-----------------|-------------------------|---------------------|-----|-----|-----|
| | 155 | | 160 | | 165 |
| His Ile Val Thr | Val Ala Ser Val Cys Gly | His Glu Gly Ile Pro | | | |
| | 170 | 175 | | 180 | |
| Tyr Leu Ile Pro | Tyr Cys Ser Ser Lys Phe | Ala Ala Val Gly Phe | | | |
| | 185 | 190 | | 195 | |
| His Arg Gly Leu | Thr Ser Glu Leu Gln Ala | Leu Gly Lys Thr Gly | | | |
| | 200 | 205 | | 210 | |
| Ile Lys Thr Ser | Cys Leu Cys Pro Val Phe | Val Asn Thr Gly Phe | | | |
| | 215 | 220 | | 225 | |
| Thr Lys Asn Pro | Ser Thr Arg Leu Trp Pro | Val Leu Glu Thr Asp | | | |
| | 230 | 235 | | 240 | |
| Glu Val Val Arg | Ser Leu Ile Asp Gly Ile | Leu Thr Asn Lys Lys | | | |
| | 245 | 250 | | 255 | |
| Met Ile Phe Val | Pro Ser Tyr Ile Asn Ile | Phe Leu Arg Leu Gln | | | |
| | 260 | 265 | | 270 | |
| Lys Phe Leu Pro | Glu Arg Ala Ser Ala Ile | Leu Asn Arg Met Gln | | | |
| | 275 | 280 | | 285 | |
| Asn Ile Gln Phe | Glu Ala Val Val Gly His | Lys Ile Lys Met Lys | | | |
| | 290 | 295 | | 300 | |

<210> 465

<211> 1547

<212> DNA

<213> Homo sapiens

<400> 465

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<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Lys | Ala | Arg | Leu | Phe | Arg | Leu | Trp | Leu | Val | Leu | Gly | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Met | Ile | Leu | Leu | Ile | Ile | Val | Tyr | Trp | Asp | Ser | Ala | Gly |
| | | | 20 | | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | His | Phe | Tyr | Leu | His | Thr | Ser | Phe | Ser | Arg | Pro | His | Thr |
| | | | 35 | | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Pro | Leu | Pro | Thr | Pro | Gly | Pro | Asp | Arg | Asp | Arg | Glu | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Thr | Ala | Asp | Ser | Asp | Val | Asp | Glu | Phe | Leu | Asp | Lys | Phe | Leu | Ser | | 65 | 70 | 75 |
| Ala | Gly | Val | Lys | Gln | Ser | Asp | Leu | Pro | Arg | Lys | Glu | Thr | Glu | Gln | | 80 | 85 | 90 |
| Pro | Pro | Ala | Pro | Gly | Ser | Met | Glu | Glu | Ser | Val | Arg | Gly | Tyr | Asp | | 95 | 100 | 105 |
| Trp | Ser | Pro | Arg | Asp | Ala | Arg | Arg | Ser | Pro | Asp | Gln | Gly | Arg | Gln | | 110 | 115 | 120 |
| Gln | Ala | Glu | Arg | Arg | Ser | Val | Leu | Arg | Gly | Phe | Cys | Ala | Asn | Ser | | 125 | 130 | 135 |
| Ser | Leu | Ala | Phe | Pro | Thr | Lys | Glu | Arg | Ala | Phe | Asp | Asp | Ile | Pro | | 140 | 145 | 150 |
| Asn | Ser | Glu | Leu | Ser | His | Leu | Ile | Val | Asp | Asp | Arg | His | Gly | Ala | | 155 | 160 | 165 |
| Ile | Tyr | Cys | Tyr | Val | Pro | Lys | Val | Ala | Cys | Thr | Asn | Trp | Lys | Arg | | 170 | 175 | 180 |
| Val | Met | Ile | Val | Leu | Ser | Gly | Ser | Leu | Leu | His | Arg | Gly | Ala | Pro | | 185 | 190 | 195 |
| Tyr | Arg | Asp | Pro | Leu | Arg | Ile | Pro | Arg | Glu | His | Val | His | Asn | Ala | | 200 | 205 | 210 |
| Ser | Ala | His | Leu | Thr | Phe | Asn | Lys | Phe | Trp | Arg | Arg | Tyr | Gly | Lys | | 215 | 220 | 225 |
| Leu | Ser | Arg | His | Leu | Met | Lys | Val | Lys | Leu | Lys | Lys | Tyr | Thr | Lys | | 230 | 235 | 240 |
| Phe | Leu | Phe | Val | Arg | Asp | Pro | Phe | Val | Arg | Leu | Ile | Ser | Ala | Phe | | 245 | 250 | 255 |
| Arg | Ser | Lys | Phe | Glu | Leu | Glu | Asn | Glu | Glu | Phe | Tyr | Arg | Lys | Phe | | 260 | 265 | 270 |
| Ala | Val | Pro | Met | Leu | Arg | Leu | Tyr | Ala | Asn | His | Thr | Ser | Leu | Pro | | 275 | 280 | 285 |
| Ala | Ser | Ala | Arg | Glu | Ala | Phe | Arg | Ala | Gly | Leu | Lys | Val | Ser | Phe | | 290 | 295 | 300 |
| Ala | Asn | Phe | Ile | Gln | Tyr | Leu | Leu | Asp | Pro | His | Thr | Glu | Lys | Leu | | 305 | 310 | 315 |
| Ala | Pro | Phe | Asn | Glu | His | Trp | Arg | Gln | Val | Tyr | Arg | Leu | Cys | His | | 320 | 325 | 330 |
| Pro | Cys | Gln | Ile | Asp | Tyr | Asp | Phe | Val | Gly | Lys | Leu | Glu | Thr | Leu | | 335 | 340 | 345 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Glu | Asp | Ala | Ala | Gln | Leu | Leu | Gln | Leu | Leu | Gln | Val | Asp | Arg |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Gln | Leu | Arg | Phe | Pro | Pro | Ser | Tyr | Arg | Asn | Arg | Thr | Ala | Ser | Ser |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Trp | Glu | Glu | Asp | Trp | Phe | Ala | Lys | Ile | Pro | Leu | Ala | Trp | Arg | Gln |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Gln | Leu | Tyr | Lys | Leu | Tyr | Glu | Ala | Asp | Phe | Val | Leu | Phe | Gly | Tyr |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Pro | Lys | Pro | Glu | Asn | Leu | Leu | Arg | Asp | | | | | | |
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<210> 467

<211> 1071

<212> DNA

<213> Homo sapiens

<400> 467

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 <211> 270
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Gly Arg Ala Leu Glu Gln Glu Leu Pro Gly Ala Val Phe Ile Leu
 50 55 60
 Cys Asp Val Thr Gln Glu Asp Asp Val Lys Thr Leu Val Ser Glu
 65 70 75
 Thr Ile Arg Arg Phe Gly Arg Leu Asp Cys Val Val Asn Asn Ala
 80 85 90
 Gly His His Pro Pro Pro Gln Arg Pro Glu Glu Thr Ser Ala Gln
 95 100 105
 Gly Phe Arg Gln Leu Leu Glu Leu Asn Leu Leu Gly Thr Tyr Thr
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 Leu Thr Lys Leu Ala Leu Pro Tyr Leu Arg Lys Ser Gln Gly Asn
 125 130 135
 Val Ile Asn Ile Ser Ser Leu Val Gly Ala Ile Gly Gln Ala Gln
 140 145 150
 Ala Val Pro Tyr Val Ala Thr Lys Gly Ala Val Thr Ala Met Thr
 155 160 165
 Lys Ala Leu Ala Leu Asp Glu Ser Pro Tyr Gly Val Arg Val Asn
 170 175 180
 Cys Ile Ser Pro Gly Asn Ile Trp Thr Pro Leu Trp Glu Glu Leu
 185 190 195
 Ala Ala Leu Met Pro Asp Pro Arg Ala Thr Ile Arg Glu Gly Met
 200 205 210

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Gln | Pro | Leu | Gly | Arg | Met | Gly | Gln | Pro | Ala | Glu | Val | Gly |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Ala | Ala | Val | Phe | Leu | Ala | Ser | Glu | Ala | Asn | Phe | Cys | Thr | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ile | Glu | Leu | Leu | Val | Thr | Gly | Gly | Ala | Glu | Leu | Gly | Tyr | Gly | Cys |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Ala | Ser | Arg | Ser | Thr | Pro | Val | Asp | Ala | Pro | Asp | Ile | Pro | Ser |
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<210> 470
 <211> 180
 <212> PRT
 <213> Homo sapiens

<400> 470
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 20 25 30

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gln | Gly | Arg | Pro | Gly | Pro | Leu | Ala | Pro | Gly | Pro | His | Gln | Val | 35 | 40 | 45 |
| Pro | Leu | Asp | Leu | Val | Ser | Arg | Met | Lys | Pro | Tyr | Ala | Arg | Met | Glu | 50 | 55 | 60 |
| Glu | Tyr | Glu | Arg | Asn | Ile | Glu | Glu | Met | Val | Ala | Gln | Leu | Arg | Asn | 65 | 70 | 75 |
| Ser | Ser | Glu | Leu | Ala | Gln | Arg | Lys | Cys | Glu | Val | Asn | Leu | Gln | Leu | 80 | 85 | 90 |
| Trp | Met | Ser | Asn | Lys | Arg | Ser | Leu | Ser | Pro | Trp | Gly | Tyr | Ser | Ile | 95 | 100 | 105 |
| Asn | His | Asp | Pro | Ser | Arg | Ile | Pro | Val | Asp | Leu | Pro | Glu | Ala | Arg | 110 | 115 | 120 |
| Cys | Leu | Cys | Leu | Gly | Cys | Val | Asn | Pro | Phe | Thr | Met | Gln | Glu | Asp | 125 | 130 | 135 |
| Arg | Ser | Met | Val | Ser | Val | Pro | Val | Phe | Ser | Gln | Val | Pro | Val | Arg | 140 | 145 | 150 |
| Arg | Arg | Leu | Cys | Pro | Pro | Pro | Pro | Arg | Thr | Gly | Pro | Cys | Arg | Gln | 155 | 160 | 165 |
| Arg | Ala | Val | Met | Glu | Thr | Ile | Ala | Val | Gly | Cys | Thr | Cys | Ile | Phe | 170 | 175 | 180 |

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 cggcccgag ctaacggcgc tctggccgc ctggatcgcg gctgtggcgg 200
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 cagcccatga ccgcctccaa ctggacgctg gtgatggagg gcgagtggat 300
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<210> 472

<211> 349

<212> PRT

<213> Homo sapiens

<400> 472

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Gly | Gly | Arg | Cys | Gly | Pro | Gln | Leu | Thr | Ala | Leu | Leu | Ala | 1 | 5 | 10 | 15 |
| Ala | Trp | Ile | Ala | Ala | Val | Ala | Ala | Thr | Ala | Gly | Pro | Glu | Glu | Ala | 20 | 25 | 30 | |
| Ala | Leu | Pro | Pro | Glu | Gln | Ser | Arg | Val | Gln | Pro | Met | Thr | Ala | Ser | 35 | 40 | 45 | |
| Asn | Trp | Thr | Leu | Val | Met | Glu | Gly | Glu | Trp | Met | Leu | Lys | Phe | Tyr | 50 | 55 | 60 | |
| Ala | Pro | Trp | Cys | Pro | Ser | Cys | Gln | Gln | Thr | Asp | Ser | Glu | Trp | Glu | 65 | 70 | 75 | |
| Ala | Phe | Ala | Lys | Asn | Gly | Glu | Ile | Leu | Gln | Ile | Ser | Val | Gly | Lys | 80 | 85 | 90 | |
| Val | Asp | Val | Ile | Gln | Glu | Pro | Gly | Leu | Ser | Gly | Arg | Phe | Phe | Val | 95 | 100 | 105 | |
| Thr | Thr | Leu | Pro | Ala | Phe | Phe | His | Ala | Lys | Asp | Gly | Ile | Phe | Arg | 110 | 115 | 120 | |
| Arg | Tyr | Arg | Gly | Pro | Gly | Ile | Phe | Glu | Asp | Leu | Gln | Asn | Tyr | Ile | 125 | 130 | 135 | |
| Leu | Glu | Lys | Lys | Trp | Gln | Ser | Val | Glu | Pro | Leu | Thr | Gly | Trp | Lys | 140 | 145 | 150 | |
| Ser | Pro | Ala | Ser | Leu | Thr | Met | Ser | Gly | Met | Ala | Gly | Leu | Phe | Ser | 155 | 160 | 165 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Ser | Gly | Lys | Ile | Trp | His | Leu | His | Asn | Tyr | Phe | Thr | Val | Thr | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Leu | Gly | Ile | Pro | Ala | Trp | Cys | Ser | Tyr | Val | Phe | Phe | Val | Ile | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Thr | Leu | Val | Phe | Gly | Leu | Phe | Met | Gly | Leu | Val | Leu | Val | Val | Ile | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Ser | Glu | Cys | Phe | Tyr | Val | Pro | Leu | Pro | Arg | His | Leu | Ser | Glu | Arg | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Glu | Gln | Asn | Arg | Arg | Ser | Glu | Glu | Ala | His | Arg | Ala | Glu | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Gln | Asp | Ala | Glu | Glu | Glu | Lys | Asp | Asp | Ser | Asn | Glu | Glu | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Lys | Asp | Ser | Leu | Val | Asp | Asp | Glu | Glu | Glu | Lys | Glu | Asp | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gly | Asp | Glu | Asp | Glu | Ala | Glu | Glu | Glu | Glu | Glu | Glu | Asp | Asn | Leu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ala | Ala | Gly | Val | Asp | Glu | Glu | Arg | Ser | Glu | Ala | Asn | Asp | Gln | Gly | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Pro | Pro | Gly | Glu | Asp | Gly | Val | Thr | Arg | Glu | Glu | Val | Glu | Pro | Glu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Glu | Ala | Glu | Glu | Gly | Ile | Ser | Glu | Gln | Pro | Cys | Pro | Ala | Asp | Thr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Val | Val | Glu | Asp | Ser | Leu | Arg | Gln | Arg | Lys | Ser | Gln | His | Ala | |
| | | | | 335 | | | | | 340 | | | | | 345 | |

Asp Lys Gly Leu

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<210> 474

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<220>

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<400> 474

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<210> 475

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<400> 475

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<210> 476

<211> 2478

<212> DNA

<213> Homo sapiens

<400> 476

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tcaagaacaa tggaatatca tcttgattta gaaaatttgg atgaagatgg 200

atataactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250

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 <211> 201
 <212> PRT
 <213> Homo sapiens

<400> 477
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 35 40 45
 Ile Ala Val Ile Leu Gly Ile Leu Cys Leu Val Ile Leu Val Ile
 50 55 60
 Ala Val Val Leu Gly Thr Met Gly Val Leu Ser Ser Pro Cys Pro
 65 70 75
 Pro Asn Trp Ile Ile Tyr Glu Lys Ser Cys Tyr Leu Phe Ser Met
 80 85 90
 Ser Leu Asn Ser Trp Asp Gly Ser Lys Arg Gln Cys Trp Gln Leu
 95 100 105
 Gly Ser Asn Leu Leu Lys Ile Asp Ser Ser Asn Glu Leu Gly Phe
 110 115 120
 Ile Val Lys Gln Val Ser Ser Gln Pro Asp Asn Ser Phe Trp Ile
 125 130 135
 Gly Leu Ser Arg Pro Gln Thr Glu Val Pro Trp Leu Trp Glu Asp
 140 145 150
 Gly Ser Thr Phe Ser Ser Asn Leu Phe Gln Ile Arg Thr Thr Ala
 155 160 165
 Thr Gln Glu Asn Pro Ser Pro Asn Cys Val Trp Ile His Val Ser
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 Val Ile Tyr Asp Gln Leu Cys Ser Val Pro Ser Tyr Ser Ile Cys
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 Glu Lys Lys Phe Ser Met
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<211> 27
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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 478
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<220>
<223> Synthetic oligonucleotide probe

<400> 479
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 480
atcctcccag agccatggta cctc 24

<210> 481
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<212> DNA
<213> Homo sapiens

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 <211> 693
 <212> PRT
 <213> Homo sapiens

<400> 483
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 Asp Phe Arg Phe Cys Ser Gln Arg Asn Gln Thr His Arg Ser Ser
 35 40 45
 Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn
 50 55 60
 Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His
 65 70 75
 Pro Ala Ser Arg Ser Phe Pro Asp Pro Arg Gly Leu Tyr His Phe
 80 85 90

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Leu | Tyr | Trp | Asn | Arg | His | Ala | Gly | Arg | Leu | His | Leu | Leu | Tyr | 95 | 100 | 105 |
| Gly | Lys | Arg | Asp | Phe | Leu | Leu | Ser | Asp | Lys | Ala | Ser | Ser | Leu | Leu | 110 | 115 | 120 |
| Cys | Phe | Gln | His | Gln | Glu | Glu | Ser | Leu | Ala | Gln | Gly | Pro | Pro | Leu | 125 | 130 | 135 |
| Leu | Ala | Thr | Ser | Val | Thr | Ser | Trp | Trp | Ser | Pro | Gln | Asn | Ile | Ser | 140 | 145 | 150 |
| Leu | Pro | Ser | Ala | Ala | Ser | Phe | Thr | Phe | Ser | Phe | His | Ser | Pro | Pro | 155 | 160 | 165 |
| His | Thr | Ala | Ala | His | Asn | Ala | Ser | Val | Asp | Met | Cys | Glu | Leu | Lys | 170 | 175 | 180 |
| Arg | Asp | Leu | Gln | Leu | Leu | Ser | Gln | Phe | Leu | Lys | His | Pro | Gln | Lys | 185 | 190 | 195 |
| Ala | Ser | Arg | Arg | Pro | Ser | Ala | Ala | Pro | Ala | Ser | Gln | Gln | Leu | Gln | 200 | 205 | 210 |
| Ser | Leu | Glu | Ser | Lys | Leu | Thr | Ser | Val | Arg | Phe | Met | Gly | Asp | Met | 215 | 220 | 225 |
| Val | Ser | Phe | Glu | Glu | Asp | Arg | Ile | Asn | Ala | Thr | Val | Trp | Lys | Leu | 230 | 235 | 240 |
| Gln | Pro | Thr | Ala | Gly | Leu | Gln | Asp | Leu | His | Ile | His | Ser | Arg | Gln | 245 | 250 | 255 |
| Glu | Glu | Glu | Gln | Ser | Glu | Ile | Met | Glu | Tyr | Ser | Val | Leu | Leu | Pro | 260 | 265 | 270 |
| Arg | Thr | Leu | Phe | Gln | Arg | Thr | Lys | Gly | Arg | Ser | Gly | Glu | Ala | Glu | 275 | 280 | 285 |
| Lys | Arg | Leu | Leu | Leu | Val | Asp | Phe | Ser | Ser | Gln | Ala | Leu | Phe | Gln | 290 | 295 | 300 |
| Asp | Lys | Asn | Ser | Ser | Gln | Val | Leu | Gly | Glu | Lys | Val | Leu | Gly | Ile | 305 | 310 | 315 |
| Val | Val | Gln | Asn | Thr | Lys | Val | Ala | Asn | Leu | Thr | Glu | Pro | Val | Val | 320 | 325 | 330 |
| Leu | Thr | Phe | Gln | His | Gln | Leu | Gln | Pro | Lys | Asn | Val | Thr | Leu | Gln | 335 | 340 | 345 |
| Cys | Val | Phe | Trp | Val | Glu | Asp | Pro | Thr | Leu | Ser | Ser | Pro | Gly | His | 350 | 355 | 360 |
| Trp | Ser | Ser | Ala | Gly | Cys | Glu | Thr | Val | Arg | Arg | Glu | Thr | Gln | Thr | 365 | 370 | 375 |

| | | | |
|---|-----|-----|-----|
| Ser Cys Phe Cys Asn His Leu Thr Tyr Phe Ala Val Leu Met Val | 380 | 385 | 390 |
| Ser Ser Val Glu Val Asp Ala Val His Lys His Tyr Leu Ser Leu | 395 | 400 | 405 |
| Leu Ser Tyr Val Gly Cys Val Val Ser Ala Leu Ala Cys Leu Val | 410 | 415 | 420 |
| Thr Ile Ala Ala Tyr Leu Cys Ser Arg Val Pro Leu Pro Cys Arg | 425 | 430 | 435 |
| Arg Lys Pro Arg Asp Tyr Thr Ile Lys Val His Met Asn Leu Leu | 440 | 445 | 450 |
| Leu Ala Val Phe Leu Leu Asp Thr Ser Phe Leu Leu Ser Glu Pro | 455 | 460 | 465 |
| Val Ala Leu Thr Gly Ser Glu Ala Gly Cys Arg Ala Ser Ala Ile | 470 | 475 | 480 |
| Phe Leu His Phe Ser Leu Leu Thr Cys Leu Ser Trp Met Gly Leu | 485 | 490 | 495 |
| Glu Gly Tyr Asn Leu Tyr Arg Leu Val Val Glu Val Phe Gly Thr | 500 | 505 | 510 |
| Tyr Val Pro Gly Tyr Leu Leu Lys Leu Ser Ala Met Gly Trp Gly | 515 | 520 | 525 |
| Phe Pro Ile Phe Leu Val Thr Leu Val Ala Leu Val Asp Val Asp | 530 | 535 | 540 |
| Asn Tyr Gly Pro Ile Ile Leu Ala Val His Arg Thr Pro Glu Gly | 545 | 550 | 555 |
| Val Ile Tyr Pro Ser Met Cys Trp Ile Arg Asp Ser Leu Val Ser | 560 | 565 | 570 |
| Tyr Ile Thr Asn Leu Gly Leu Phe Ser Leu Val Phe Leu Phe Asn | 575 | 580 | 585 |
| Met Ala Met Leu Ala Thr Met Val Val Gln Ile Leu Arg Leu Arg | 590 | 595 | 600 |
| Pro His Thr Gln Lys Trp Ser His Val Leu Thr Leu Leu Gly Leu | 605 | 610 | 615 |
| Ser Leu Val Leu Gly Leu Pro Trp Ala Leu Ile Phe Phe Ser Phe | 620 | 625 | 630 |
| Ala Ser Gly Thr Phe Gln Leu Val Val Leu Tyr Leu Phe Ser Ile | 635 | 640 | 645 |
| Ile Thr Ser Phe Gln Gly Phe Leu Ile Phe Ile Trp Tyr Trp Ser | 650 | 655 | 660 |

Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro Leu Lys Ser Asn
665 670 675

Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser
680 685 690

Ser Arg Ile

<210> 484

<211> 516

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 68, 70, 84, 147

<223> unknown base

<400> 484

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tgtgcatagg actccagagg gcgtcatcta cccttccatg tgctggatcc 450

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tttctgttca acatgg 516

<210> 485

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 485

ggcattggag cagtgtggtg tg 22

<210> 486

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 486

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<210> 487

<211> 2849

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2715

<223> unknown base

<400> 487

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cggagtacaa gatcctcagc atgagagaat tattactgtg tctactaatg 450
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<210> 488

<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

| | | | | | | | | | | | | | | | | | | |
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| Met | Ser | Leu | Phe | Gly | Leu | Leu | Leu | Leu | Thr | Ser | Ala | Leu | Ala | Gly | 1 | 5 | 10 | 15 |
| Gln | Arg | Gln | Gly | Thr | Gln | Ala | Glu | Ser | Asn | Leu | Ser | Ser | Lys | Phe | 20 | 25 | 30 | |
| Gln | Phe | Ser | Ser | Asn | Lys | Glu | Gln | Asn | Gly | Val | Gln | Asp | Pro | Gln | 35 | 40 | 45 | |
| His | Glu | Arg | Ile | Ile | Thr | Val | Ser | Thr | Asn | Gly | Ser | Ile | His | Ser | 50 | 55 | 60 | |
| Pro | Arg | Phe | Pro | His | Thr | Tyr | Pro | Arg | Asn | Thr | Val | Leu | Val | Trp | 65 | 70 | 75 | |
| Arg | Leu | Val | Ala | Val | Glu | Glu | Asn | Val | Trp | Ile | Gln | Leu | Thr | Phe | 80 | 85 | 90 | |
| Asp | Glu | Arg | Phe | Gly | Leu | Glu | Asp | Pro | Glu | Asp | Asp | Ile | Cys | Lys | 95 | 100 | 105 | |
| Tyr | Asp | Phe | Val | Glu | Val | Glu | Glu | Pro | Ser | Asp | Gly | Thr | Ile | Leu | 110 | 115 | 120 | |
| Gly | Arg | Trp | Cys | Gly | Ser | Gly | Thr | Val | Pro | Gly | Lys | Gln | Ile | Ser | 125 | 130 | 135 | |
| Lys | Gly | Asn | Gln | Ile | Arg | Ile | Arg | Phe | Val | Ser | Asp | Glu | Tyr | Phe | 140 | 145 | 150 | |
| Pro | Ser | Glu | Pro | Gly | Phe | Cys | Ile | His | Tyr | Asn | Ile | Val | Met | Pro | 155 | 160 | 165 | |

| | | | |
|---|-----|-----|-----|
| Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu Pro Pro Ser Ala | 170 | 175 | 180 |
| Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala Phe Ser Thr | 185 | 190 | 195 |
| Leu Glu Asp Leu Ile Arg Tyr Leu Glu Pro Glu Arg Trp Gln Leu | 200 | 205 | 210 |
| Asp Leu Glu Asp Leu Tyr Arg Pro Thr Trp Gln Leu Leu Gly Lys | 215 | 220 | 225 |
| Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu | 230 | 235 | 240 |
| Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe | 245 | 250 | 255 |
| Ser Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe | 260 | 265 | 270 |
| Trp Pro Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala | 275 | 280 | 285 |
| Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys | 290 | 295 | 300 |
| Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr | 305 | 310 | 315 |
| Gly Val Arg Gly Leu His Lys Ser Leu Thr Asp Val Ala Leu Glu | 320 | 325 | 330 |
| His His Glu Glu Cys Asp Cys Val Cys Arg Gly Ser Thr Gly Gly | 335 | 340 | 345 |

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<400> 496

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| Met | Val | Phe | Pro | Met | Trp | Thr | Leu | Lys | Arg | Gln | Ile | Leu | Ile | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Asn | Ile | Ile | Leu | Ile | Ser | Lys | Leu | Leu | Gly | Ala | Arg | Trp | Phe |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Lys | Thr | Leu | Pro | Cys | Asp | Val | Thr | Leu | Asp | Val | Pro | Lys | Asn |
| | | | | 35 | | | | 40 | | | | | 45 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Val | Ile | Val | Asp | Cys | Thr | Asp | Lys | His | Leu | Thr | Glu | Ile | Pro |
| | | | | 50 | | | | 55 | | | | | 60 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Ile | Pro | Thr | Asn | Thr | Thr | Asn | Leu | Thr | Leu | Thr | Ile | Asn |
| | | | | 65 | | | | 70 | | | | | 75 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ile | Pro | Asp | Ile | Ser | Pro | Ala | Ser | Phe | His | Arg | Leu | Asp | His |
| | | | | 80 | | | | 85 | | | | | 90 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Glu | Ile | Asp | Phe | Arg | Cys | Asn | Cys | Val | Pro | Ile | Pro | Leu |
| | | | | 95 | | | | 100 | | | | | 105 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Ser | Lys | Asn | Asn | Met | Cys | Ile | Lys | Arg | Leu | Gln | Ile | Lys | Pro |
| | | | | 110 | | | | 115 | | | | | 120 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Phe | Ser | Gly | Leu | Thr | Tyr | Leu | Lys | Ser | Leu | Tyr | Leu | Asp |
| | | | | 125 | | | | 130 | | | | | 135 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Asn | Gln | Leu | Leu | Glu | Ile | Pro | Gln | Gly | Leu | Pro | Pro | Ser | Leu |
| | | | | 140 | | | | 145 | | | | | 150 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Leu | Ser | Leu | Glu | Ala | Asn | Asn | Ile | Phe | Ser | Ile | Arg | Lys |
| | | | | 155 | | | | 160 | | | | | 165 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Leu | Thr | Glu | Leu | Ala | Asn | Ile | Glu | Ile | Leu | Tyr | Leu | Gly |
| | | | | 170 | | | | 175 | | | | | 180 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Asn | Cys | Tyr | Tyr | Arg | Asn | Pro | Cys | Tyr | Val | Ser | Tyr | Ser | Ile |
| | | | | 185 | | | | 190 | | | | | 195 | |

| | | | |
|---|-----|-----|-----|
| Glu Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val Leu Ser | 200 | 205 | 210 |
| Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro Ser | 215 | 220 | 225 |
| Thr Leu Thr Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile | 230 | 235 | 240 |
| Gln Glu Asp Asp Phe Asn Asn Leu Asn Gln Leu Gln Ile Leu Asp | 245 | 250 | 255 |
| Leu Ser Gly Asn Cys Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys | 260 | 265 | 270 |
| Ala Pro Cys Lys Asn Asn Ser Pro Leu Gln Ile Pro Val Asn Ala | 275 | 280 | 285 |
| Phe Asp Ala Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn | 290 | 295 | 300 |
| Ser Leu Gln His Val Pro Pro Arg Trp Phe Lys Asn Ile Asn Lys | 305 | 310 | 315 |
| Leu Gln Glu Leu Asp Leu Ser Gln Asn Phe Leu Ala Lys Glu Ile | 320 | 325 | 330 |
| Gly Asp Ala Lys Phe Leu His Phe Leu Pro Ser Leu Ile Gln Leu | 335 | 340 | 345 |
| Asp Leu Ser Phe Asn Phe Glu Leu Gln Val Tyr Arg Ala Ser Met | 350 | 355 | 360 |
| Asn Leu Ser Gln Ala Phe Ser Ser Leu Lys Ser Leu Lys Ile Leu | 365 | 370 | 375 |
| Arg Ile Arg Gly Tyr Val Phe Lys Glu Leu Lys Ser Phe Asn Leu | 380 | 385 | 390 |
| Ser Pro Leu His Asn Leu Gln Asn Leu Glu Val Leu Asp Leu Gly | 395 | 400 | 405 |
| Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met Phe Lys Gln Phe | 410 | 415 | 420 |
| Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys Ile Ser Pro | 425 | 430 | 435 |
| Ser Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala Arg Thr | 440 | 445 | 450 |
| Ser Val Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His Tyr | 455 | 460 | 465 |
| Phe Arg Tyr Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys | 470 | 475 | 480 |

| | | | |
|---|-----|-----|-----|
| Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly | 485 | 490 | 495 |
| Gln Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser | 500 | 505 | 510 |
| Ser Asp Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser | 515 | 520 | 525 |
| Gly Asn Leu Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro | 530 | 535 | 540 |
| Leu Ala Glu Leu Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp | 545 | 550 | 555 |
| Leu Leu His Ser Thr Ala Phe Glu Glu Leu His Lys Leu Glu Val | 560 | 565 | 570 |
| Leu Asp Ile Ser Ser Asn Ser His Tyr Phe Gln Ser Glu Gly Ile | 575 | 580 | 585 |
| Thr His Met Leu Asn Phe Thr Lys Asn Leu Lys Val Leu Gln Lys | 590 | 595 | 600 |
| Leu Met Met Asn Asp Asn Asp Ile Ser Ser Ser Thr Ser Arg Thr | 605 | 610 | 615 |
| Met Glu Ser Glu Ser Leu Arg Thr Leu Glu Phe Arg Gly Asn His | 620 | 625 | 630 |
| Leu Asp Val Leu Trp Arg Glu Gly Asp Asn Arg Tyr Leu Gln Leu | 635 | 640 | 645 |
| Phe Lys Asn Leu Leu Lys Leu Glu Glu Leu Asp Ile Ser Lys Asn | 650 | 655 | 660 |
| Ser Leu Ser Phe Leu Pro Ser Gly Val Phe Asp Gly Met Pro Pro | 665 | 670 | 675 |
| Asn Leu Lys Asn Leu Ser Leu Ala Lys Asn Gly Leu Lys Ser Phe | 680 | 685 | 690 |
| Ser Trp Lys Lys Leu Gln Cys Leu Lys Asn Leu Glu Thr Leu Asp | 695 | 700 | 705 |
| Leu Ser His Asn Gln Leu Thr Thr Val Pro Glu Arg Leu Ser Asn | 710 | 715 | 720 |
| Cys Ser Arg Ser Leu Lys Asn Leu Ile Leu Lys Asn Asn Gln Ile | 725 | 730 | 735 |
| Arg Ser Leu Thr Lys Tyr Phe Leu Gln Asp Ala Phe Gln Leu Arg | 740 | 745 | 750 |
| Tyr Leu Asp Leu Ser Ser Asn Lys Ile Gln Met Ile Gln Lys Thr | 755 | 760 | 765 |

| | | | |
|---|------|------|------|
| Ser Phe Pro Glu Asn Val Leu Asn Asn Leu Lys Met Leu Leu Leu | 770 | 775 | 780 |
| His His Asn Arg Phe Leu Cys Thr Cys Asp Ala Val Trp Phe Val | 785 | 790 | 795 |
| Trp Trp Val Asn His Thr Glu Val Thr Ile Pro Tyr Leu Ala Thr | 800 | 805 | 810 |
| Asp Val Thr Cys Val Gly Pro Gly Ala His Lys Gly Gln Ser Val | 815 | 820 | 825 |
| Ile Ser Leu Asp Leu Tyr Thr Cys Glu Leu Asp Leu Thr Asn Leu | 830 | 835 | 840 |
| Ile Leu Phe Ser Leu Ser Ile Ser Val Ser Leu Phe Leu Met Val | 845 | 850 | 855 |
| Met Met Thr Ala Ser His Leu Tyr Phe Trp Asp Val Trp Tyr Ile | 860 | 865 | 870 |
| Tyr His Phe Cys Lys Ala Lys Ile Lys Gly Tyr Gln Arg Leu Ile | 875 | 880 | 885 |
| Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val Tyr Asp Thr Lys | 890 | 895 | 900 |
| Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu Val Ala Lys | 905 | 910 | 915 |
| Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu Glu Glu | 920 | 925 | 930 |
| Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser Gln | 935 | 940 | 945 |
| Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys | 950 | 955 | 960 |
| Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His | 965 | 970 | 975 |
| Gln Arg Leu Met Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe | 980 | 985 | 990 |
| Leu Glu Lys Pro Phe Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys | 995 | 1000 | 1005 |
| Arg Leu Cys Gly Ser Ser Val Leu Glu Trp Pro Thr Asn Pro Gln | 1010 | 1015 | 1020 |
| Ala His Pro Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Ala Thr | 1025 | 1030 | 1035 |
| Asp Asn His Val Ala Tyr Ser Gln Val Phe Lys Glu Thr Val | 1040 | 1045 | |

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<210> 498

<211> 1041

<212> PRT

<213> Homo sapiens

<400> 498

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Met | Phe | Leu | Gln | Ser | Ser | Met | Leu | Thr | Cys | Ile | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ile | Ser | Gly | Ser | Cys | Glu | Leu | Cys | Ala | Glu | Glu | Asn | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Arg | Ser | Tyr | Pro | Cys | Asp | Glu | Lys | Lys | Gln | Asn | Asp | Ser | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ala | Glu | Cys | Ser | Asn | Arg | Arg | Leu | Gln | Glu | Val | Pro | Gln | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Gly | Lys | Tyr | Val | Thr | Glu | Leu | Asp | Leu | Ser | Asp | Asn | Phe | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | His | Ile | Thr | Asn | Glu | Ser | Phe | Gln | Gly | Leu | Gln | Asn | Leu | Thr |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ile | Asn | Leu | Asn | His | Asn | Pro | Asn | Val | Gln | His | Gln | Asn | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Pro | Gly | Ile | Gln | Ser | Asn | Gly | Leu | Asn | Ile | Thr | Asp | Gly | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Asn | Leu | Lys | Asn | Leu | Arg | Glu | Leu | Leu | Leu | Glu | Asp | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Pro | Gln | Ile | Pro | Ser | Gly | Leu | Pro | Glu | Ser | Leu | Thr | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Leu | Ile | Gln | Asn | Asn | Ile | Tyr | Asn | Ile | Thr | Lys | Glu | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Ser | Arg | Leu | Ile | Asn | Leu | Lys | Asn | Leu | Tyr | Leu | Ala | Trp | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Tyr | Phe | Asn | Lys | Val | Cys | Glu | Lys | Thr | Asn | Ile | Glu | Asp | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Phe | Glu | Thr | Leu | Thr | Asn | Leu | Glu | Leu | Leu | Ser | Leu | Ser | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Leu | Ser | His | Val | Pro | Pro | Lys | Leu | Pro | Ser | Ser | Leu | Arg |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | Phe | Leu | Ser | Asn | Thr | Gln | Ile | Lys | Tyr | Ile | Ser | Glu | Glu |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Asp Phe Lys Gly | Leu Ile Asn Leu Thr | Leu Leu Asp Leu Ser Gly | 245 | 250 | 255 |
| Asn Cys Pro Arg | Cys Phe Asn Ala Pro | Phe Pro Cys Val Pro Cys | 260 | 265 | 270 |
| Asp Gly Gly Ala | Ser Ile Asn Ile Asp | Arg Phe Ala Phe Gln Asn | 275 | 280 | 285 |
| Leu Thr Gln Leu | Arg Tyr Leu Asn Leu | Ser Ser Thr Ser Leu Arg | 290 | 295 | 300 |
| Lys Ile Asn Ala | Ala Trp Phe Lys Asn | Met Pro His Leu Lys Val | 305 | 310 | 315 |
| Leu Asp Leu Glu | Phe Asn Tyr Leu Val | Gly Glu Ile Val Ser Gly | 320 | 325 | 330 |
| Ala Phe Leu Thr | Met Leu Pro Arg Leu | Glu Ile Leu Asp Leu Ser | 335 | 340 | 345 |
| Phe Asn Tyr Ile | Lys Gly Ser Tyr Pro | Gln His Ile Asn Ile Ser | 350 | 355 | 360 |
| Arg Asn Phe Ser | Lys Leu Leu Ser Leu | Arg Ala Leu His Leu Arg | 365 | 370 | 375 |
| Gly Tyr Val Phe | Gln Glu Leu Arg Glu | Asp Asp Phe Gln Pro Leu | 380 | 385 | 390 |
| Met Gln Leu Pro | Asn Leu Ser Thr Ile | Asn Leu Gly Ile Asn Phe | 395 | 400 | 405 |
| Ile Lys Gln Ile | Asp Phe Lys Leu Phe | Gln Asn Phe Ser Asn Leu | 410 | 415 | 420 |
| Glu Ile Ile Tyr | Leu Ser Glu Asn Arg | Ile Ser Pro Leu Val Lys | 425 | 430 | 435 |
| Asp Thr Arg Gln | Ser Tyr Ala Asn Ser | Ser Ser Phe Gln Arg His | 440 | 445 | 450 |
| Ile Arg Lys Arg | Arg Ser Thr Asp Phe | Glu Phe Asp Pro His Ser | 455 | 460 | 465 |
| Asn Phe Tyr His | Phe Thr Arg Pro Leu | Ile Lys Pro Gln Cys Ala | 470 | 475 | 480 |
| Ala Tyr Gly Lys | Ala Leu Asp Leu Ser | Leu Asn Ser Ile Phe Phe | 485 | 490 | 495 |
| Ile Gly Pro Asn | Gln Phe Glu Asn Leu | Pro Asp Ile Ala Cys Leu | 500 | 505 | 510 |
| Asn Leu Ser Ala | Asn Ser Asn Ala Gln | Val Leu Ser Gly Thr Glu | 515 | 520 | 525 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Phe Ser Ala Ile | Pro His Val Lys Tyr | Leu Asp Leu Thr Asn Asn | 530 | 535 | 540 |
| Arg Leu Asp Phe | Asp Asn Ala Ser Ala | Leu Thr Glu Leu Ser Asp | 545 | 550 | 555 |
| Leu Glu Val Leu | Asp Leu Ser Tyr Asn | Ser His Tyr Phe Arg Ile | 560 | 565 | 570 |
| Ala Gly Val Thr | His His Leu Glu Phe | Ile Gln Asn Phe Thr Asn | 575 | 580 | 585 |
| Leu Lys Val Leu | Asn Leu Ser His Asn | Asn Ile Tyr Thr Leu Thr | 590 | 595 | 600 |
| Asp Lys Tyr Asn | Leu Glu Ser Lys Ser | Leu Val Glu Leu Val Phe | 605 | 610 | 615 |
| Ser Gly Asn Arg | Leu Asp Ile Leu Trp | Asn Asp Asp Asp Asn Arg | 620 | 625 | 630 |
| Tyr Ile Ser Ile | Phe Lys Gly Leu Lys | Asn Leu Thr Arg Leu Asp | 635 | 640 | 645 |
| Leu Ser Leu Asn | Arg Leu Lys His Ile | Pro Asn Glu Ala Phe Leu | 650 | 655 | 660 |
| Asn Leu Pro Ala | Ser Leu Thr Glu Leu | His Ile Asn Asp Asn Met | 665 | 670 | 675 |
| Leu Lys Phe Phe | Asn Trp Thr Leu Leu | Gln Gln Phe Pro Arg Leu | 680 | 685 | 690 |
| Glu Leu Leu Asp | Leu Arg Gly Asn Lys | Leu Leu Phe Leu Thr Asp | 695 | 700 | 705 |
| Ser Leu Ser Asp | Phe Thr Ser Ser Leu | Arg Thr Leu Leu Leu Ser | 710 | 715 | 720 |
| His Asn Arg Ile | Ser His Leu Pro Ser | Gly Phe Leu Ser Glu Val | 725 | 730 | 735 |
| Ser Ser Leu Lys | His Leu Asp Leu Ser | Ser Asn Leu Leu Lys Thr | 740 | 745 | 750 |
| Ile Asn Lys Ser | Ala Leu Glu Thr Lys | Thr Thr Thr Lys Leu Ser | 755 | 760 | 765 |
| Met Leu Glu Leu | His Gly Asn Pro Phe | Glu Cys Thr Cys Asp Ile | 770 | 775 | 780 |
| Gly Asp Phe Arg | Arg Trp Met Asp Glu | His Leu Asn Val Lys Ile | 785 | 790 | 795 |
| Pro Arg Leu Val | Asp Val Ile Cys Ala | Ser Pro Gly Asp Gln Arg | 800 | 805 | 810 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Gly | Lys | Ser | Ile | Val | Ser | Leu | Glu | Leu | Thr | Thr | Cys | Val | Ser | Asp | |
| | | | | 815 | | | | | 820 | | | | | 825 | |
| Val | Thr | Ala | Val | Ile | Leu | Phe | Phe | Phe | Thr | Phe | Phe | Ile | Thr | Thr | |
| | | | | 830 | | | | | 835 | | | | | 840 | |
| Met | Val | Met | Leu | Ala | Ala | Leu | Ala | His | His | Leu | Phe | Tyr | Trp | Asp | |
| | | | | 845 | | | | | 850 | | | | | 855 | |
| Val | Trp | Phe | Ile | Tyr | Asn | Val | Cys | Leu | Ala | Lys | Val | Lys | Gly | Tyr | |
| | | | | 860 | | | | | 865 | | | | | 870 | |
| Arg | Ser | Leu | Ser | Thr | Ser | Gln | Thr | Phe | Tyr | Asp | Ala | Tyr | Ile | Ser | |
| | | | | 875 | | | | | 880 | | | | | 885 | |
| Tyr | Asp | Thr | Lys | Asp | Ala | Ser | Val | Thr | Asp | Trp | Val | Ile | Asn | Glu | |
| | | | | 890 | | | | | 895 | | | | | 900 | |
| Leu | Arg | Tyr | His | Leu | Glu | Glu | Ser | Arg | Asp | Lys | Asn | Val | Leu | Leu | |
| | | | | 905 | | | | | 910 | | | | | 915 | |
| Cys | Leu | Glu | Glu | Arg | Asp | Trp | Asp | Pro | Gly | Leu | Ala | Ile | Ile | Asp | |
| | | | | 920 | | | | | 925 | | | | | 930 | |
| Asn | Leu | Met | Gln | Ser | Ile | Asn | Gln | Ser | Lys | Lys | Thr | Val | Phe | Val | |
| | | | | 935 | | | | | 940 | | | | | 945 | |
| Leu | Thr | Lys | Lys | Tyr | Ala | Lys | Ser | Trp | Asn | Phe | Lys | Thr | Ala | Phe | |
| | | | | 950 | | | | | 955 | | | | | 960 | |
| Tyr | Leu | Ala | Leu | Gln | Arg | Leu | Met | Asp | Glu | Asn | Met | Asp | Val | Ile | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Ile | Phe | Ile | Leu | Leu | Glu | Pro | Val | Leu | Gln | His | Ser | Gln | Tyr | Leu | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Arg | Leu | Arg | Gln | Arg | Ile | Cys | Lys | Ser | Ser | Ile | Leu | Gln | Trp | Pro | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Asp | Asn | Pro | Lys | Ala | Glu | Gly | Leu | Phe | Trp | Gln | Thr | Leu | Arg | Asn | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Val | Val | Leu | Thr | Glu | Asn | Asp | Ser | Arg | Tyr | Asn | Asn | Met | Tyr | Val | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Asp | Ser | Ile | Lys | Gln | Tyr | | | | | | | | | | |
| | | | | 1040 | | | | | | | | | | | |

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<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 500
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 500
atccatgagc ctctgatggg 20

<210> 501
<211> 45
<212> DNA
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<220>
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<400> 501
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<210> 502
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<220>
<223> Synthetic oligonucleotide probe

<400> 502
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<210> 503
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<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

<400> 503
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<210> 504
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 504
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<210> 505
<211> 1738
<212> DNA
<213> Homo sapiens

<400> 505
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ggctgcaagg gaggtcctg tggacaggcc aggcagggtg gcctcaggag 150
gtgcctccag gcggccagtg ggccctgaggc cccagcaagg gctaggggcc 200
atctccagtc ccaggacaca gcagcggcca ccatggccac gcctgggctc 250
cagcagcatc agcagcccc aggaccgggg aggcacaggt ggccccacc 300
accggagga gcagctcctg cccctgtccg ggggatgact gattctctc 350
cgccaggcca cccagaggag aaggccaccc cgctggagg cacaggccat 400
gaggggctct caggaggtgc tgctgatgtg gcttctggtg ttggcagtgg 450
gcggcacaga gcacgcctac cggcccggcc gtaggggtg tgctgtccgg 500
gtcacgggg accctgtctc cgagtcgttc gtgcagcgtg tgtaccagcc 550
cttctcacc acctgcgacg ggcaccgggc ctgcagcacc taccgaacca 600
tetataggac cgctaccgc cgcagccctg ggctggcccc tgccaggcct 650
cgctacgcgt gctgccccg ctggaagagg accagcgggc ttcctggggc 700
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gctgggtggg gcctcagtgg gggctgctgc ctgaccccca gcacaataaa 1600
aatgaaacgt gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1650
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gcccaacttg ttattgcag cttataatgg ttacaaat 1738

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<211> 273
<212> PRT
<213> Homo sapiens

<400> 506
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20 25 30
Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val
35 40 45
Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg
50 55 60
Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg
65 70 75
Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro
80 85 90
Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala
95 100 105
Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro
110 115 120
Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln
125 130 135
Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln
140 145 150
Arg Cys Ile Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu

| | | |
|---|-------------------------|-----|
| 155 | 160 | 165 |
| Gly His Ser Leu Ser Ala Asp Gly Thr | Leu Cys Val Pro Lys Gly | |
| 170 | 175 | 180 |
| Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala | | |
| 185 | 190 | 195 |
| Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu | | |
| 200 | 205 | 210 |
| Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala | | |
| 215 | 220 | 225 |
| Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu | | |
| 230 | 235 | 240 |
| Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu | | |
| 245 | 250 | 255 |
| Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys | | |
| 260 | 265 | 270 |

Lys Asp Ser

<210> 507
 <211> 1700
 <212> DNA
 <213> Homo sapiens

<400> 507
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 ccaccatggc cacgcctggg ctccagcagc atcagagcag cccctgtggt 150
 tggcagcaaa gttagccttg gctgggcccg ctgtgagggg cttcgcgcta 200
 cgccctgcgg tgtcccagag gctgaggtct cctcatcttc tccctagcag 250
 tggatgagca acccaacggg ggcccgggga ggggaactgg ccccgaggga 300
 gaggaacccc aaagccacat ctgtagccag gatgagcagt gtgaatccag 350
 gcagcccccga ggaccgggga ggcacaggtg gccccacca cccgaggag 400
 cagctcctgc ccctgtccgg gggatgactg attctcctcc gccaggccac 450
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 aggaggtgct gctgatgtgg cttctggtgt tggcagtggg cggcacagag 550
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cctgcgacgg gcaccggggc tgcagcacct accgaaccat ctataggacc 700
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caatatgcca gccgccatgc cggaacggag ggagctgtgt ccagcctggc 850
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<210> 508

<211> 273

<212> PRT

<213> Homo sapiens

<400> 508

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | | 5 | | | | 10 | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |
| | | | | 35 | | | | 40 | | | | | 45 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | His | Ser | Phe | Gln | Gln | Leu | Gly | Arg | Ile | Asp | Ser | Leu | Ser | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gln | Ile | Ser | Phe | Leu | Glu | Glu | Gln | Leu | Gly | Ser | Cys | Ser | Cys | Lys | |
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Lys Asp Ser

<210> 509

<211> 1538

<212> DNA

<213> Homo sapiens

<400> 509

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<211> 273

<212> PRT

<213> Homo sapiens

<400> 510

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| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Cys | Val | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |

Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu
245 250 255

Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys
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Lys Asp Ser

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<211> 21

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<400> 511

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<210> 512

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<212> DNA

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<220>

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<400> 512

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<210> 513

<211> 46

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<213> Artificial Sequence

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<400> 513

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<210> 514

<211> 2690

<212> DNA

<213> Homo sapiens

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<222> 2039-2065

<223> unknown base

<400> 514

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<211> 364

<212> PRT

<213> Homo sapiens

<400> 515

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| Met | Ser | Val | Met | Val | Val | Arg | Lys | Lys | Val | Thr | Arg | Lys | Trp | Glu |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |

Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met

| 20 | | | | | | | | | | 25 | | | | | 30 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Met | Ala | Arg | Gln | Lys | Gly | Ile | Phe | Tyr | Leu | Thr | Leu | Phe | Leu | Ile | | | | | |
| | | | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Leu | Gly | Thr | Cys | Thr | Leu | Phe | Phe | Ala | Phe | Glu | Cys | Arg | Tyr | Leu | | | | | |
| | | | | 50 | | | | | 55 | | | | | 60 | | | | | |
| Ala | Val | Gln | Leu | Ser | Pro | Ala | Ile | Pro | Val | Phe | Ala | Ala | Met | Leu | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Phe | Leu | Phe | Ser | Met | Ala | Thr | Leu | Leu | Arg | Thr | Ser | Phe | Ser | Asp | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Pro | Gly | Val | Ile | Pro | Arg | Ala | Leu | Pro | Asp | Glu | Ala | Ala | Phe | Ile | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Glu | Met | Glu | Ile | Glu | Ala | Thr | Asn | Gly | Ala | Val | Pro | Gln | Gly | Gln | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Arg | Pro | Pro | Pro | Arg | Ile | Lys | Asn | Phe | Gln | Ile | Asn | Asn | Gln | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Val | Lys | Leu | Lys | Tyr | Cys | Tyr | Thr | Cys | Lys | Ile | Phe | Arg | Pro | Pro | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Arg | Ala | Ser | His | Cys | Ser | Ile | Cys | Asp | Asn | Cys | Val | Glu | Arg | Phe | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Asp | His | His | Cys | Pro | Trp | Val | Gly | Asn | Cys | Val | Gly | Lys | Arg | Asn | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Tyr | Arg | Tyr | Phe | Tyr | Leu | Phe | Ile | Leu | Ser | Leu | Ser | Leu | Leu | Thr | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Ile | Tyr | Val | Phe | Ala | Phe | Asn | Ile | Val | Tyr | Val | Ala | Leu | Lys | Ser | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Leu | Lys | Ile | Gly | Phe | Leu | Glu | Thr | Leu | Lys | Glu | Thr | Pro | Gly | Thr | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Val | Leu | Glu | Val | Leu | Ile | Cys | Phe | Phe | Thr | Leu | Trp | Ser | Val | Val | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Gly | Leu | Thr | Gly | Phe | His | Thr | Phe | Leu | Val | Ala | Leu | Asn | Gln | Thr | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Thr | Asn | Glu | Asp | Ile | Lys | Gly | Ser | Trp | Thr | Gly | Lys | Asn | Arg | Val | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Gln | Asn | Pro | Tyr | Ser | His | Gly | Asn | Ile | Val | Lys | Asn | Cys | Cys | Glu | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Val | Leu | Cys | Gly | Pro | Leu | Pro | Pro | Ser | Val | Leu | Asp | Arg | Arg | Gly | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ile | Leu | Pro | Leu | Glu | Glu | Ser | Gly | Ser | Arg | Pro | Pro | Ser | Thr | Gln | | | | | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 305 | | 310 | | 315 |
| Glu Thr Ser Ser Ser Leu Leu Pro Gln Ser Pro Ala Pro Thr Glu | | | | | |
| | 320 | | 325 | | 330 |
| His Leu Asn Ser Asn Glu Met Pro Glu Asp Ser Ser Thr Pro Glu | | | | | |
| | 335 | | 340 | | 345 |
| Glu Met Pro Pro Pro Glu Pro Pro Glu Pro Pro Gln Glu Ala Ala | | | | | |
| | 350 | | 355 | | 360 |
| Glu Ala Glu Lys | | | | | |

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 <222> 36, 38, 88, 118, 135, 193, 213, 222
 <223> unknown base

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 ccctgggtg gggaattgtg ttggaaagag gaactaccgc tanttctacc 200
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agtggaagtc gacctccc 18

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<213> Homo sapiens

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caaaaaagaa gaaaaagaag aagaaaaaaa atcatgaaaa ccattccagcc 150

aaaaatgcac aattctatct cttgggcaat cttcacgggg ctggctgctc 200

tgtgtctctt ccaaggagtg cccgtgcgca gcggagatgc caccttcccc 250

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ccatcctcta tgctgggaat gacaagtggg gcctggatcc tcgctgggtc 400

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<212> PRT

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| Ile | Phe | Thr | Gly | Leu | Ala | Ala | Leu | Cys | Leu | Phe | Gln | Gly | Val | Pro | |
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| Tyr | Ala | Gly | Asn | Asp | Lys | Trp | Cys | Leu | Asp | Pro | Arg | Val | Val | Leu | |
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| Asp | Val | Tyr | Asp | Glu | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr | Asp | |
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| Thr | Val | Thr | Trp | Arg | His | Ile | Ser | Pro | Lys | Ala | Val | Gly | Phe | Val | |
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| Ser | Gly | Asp | Tyr | Glu | Cys | Ser | Ala | Ser | Asn | Asp | Val | Ala | Ala | Pro | |
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| Phe | Gln | Lys | Gly | Thr | Arg | Gln | Leu | Leu | Gly | Ser | Arg | Thr | Gln | Leu |
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| Glu | Leu | Val | Leu | Ala | Gly | Ala | Ser | Leu | Leu | Leu | Ala | Ala | Leu | Leu |
| | | | | 35 | | | | 40 | | | | | | 45 |
| Leu | Gly | Cys | Leu | Val | Ala | Leu | Gly | Val | Gln | Tyr | His | Arg | Asp | Pro |
| | | | | 50 | | | | 55 | | | | | | 60 |

| | | | | | | | | | | | | | | | | | | |
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| Lys | Ile | Leu | Glu | Ser | Leu | Asp | Arg | Gly | Val | Ser | Pro | Cys | Glu | Asp | | 80 | 85 | 90 |
| Phe | Tyr | Gln | Phe | Ser | Cys | Gly | Gly | Trp | Ile | Arg | Arg | Asn | Pro | Leu | | 95 | 100 | 105 |
| Pro | Asp | Gly | Arg | Ser | Arg | Trp | Asn | Thr | Phe | Asn | Ser | Leu | Trp | Asp | | 110 | 115 | 120 |
| Gln | Asn | Gln | Ala | Ile | Leu | Lys | His | Leu | Leu | Glu | Asn | Thr | Thr | Phe | | 125 | 130 | 135 |
| Asn | Ser | Ser | Ser | Glu | Ala | Glu | Gln | Lys | Thr | Gln | Arg | Phe | Tyr | Leu | | 140 | 145 | 150 |
| Ser | Cys | Leu | Gln | Val | Glu | Arg | Ile | Glu | Glu | Leu | Gly | Ala | Gln | Pro | | 155 | 160 | 165 |
| Leu | Arg | Asp | Leu | Ile | Glu | Lys | Ile | Gly | Gly | Trp | Asn | Ile | Thr | Gly | | 170 | 175 | 180 |
| Pro | Trp | Asp | Gln | Asp | Asn | Phe | Met | Glu | Val | Leu | Lys | Ala | Val | Ala | | 185 | 190 | 195 |
| Gly | Thr | Tyr | Arg | Ala | Thr | Pro | Phe | Phe | Thr | Val | Tyr | Ile | Ser | Ala | | 200 | 205 | 210 |
| Asp | Ser | Lys | Ser | Ser | Asn | Ser | Asn | Val | Ile | Gln | Val | Asp | Gln | Ser | | 215 | 220 | 225 |
| Gly | Leu | Phe | Leu | Pro | Ser | Arg | Asp | Tyr | Tyr | Leu | Asn | Arg | Thr | Ala | | 230 | 235 | 240 |
| Asn | Glu | Lys | Val | Leu | Thr | Ala | Tyr | Leu | Asp | Tyr | Met | Glu | Glu | Leu | | 245 | 250 | 255 |
| Gly | Met | Leu | Leu | Gly | Gly | Arg | Pro | Thr | Ser | Thr | Arg | Glu | Gln | Met | | 260 | 265 | 270 |
| Gln | Gln | Val | Leu | Glu | Leu | Glu | Ile | Gln | Leu | Ala | Asn | Ile | Thr | Val | | 275 | 280 | 285 |
| Pro | Gln | Asp | Gln | Arg | Arg | Asp | Glu | Glu | Lys | Ile | Tyr | His | Lys | Met | | 290 | 295 | 300 |
| Ser | Ile | Ser | Glu | Leu | Gln | Ala | Leu | Ala | Pro | Ser | Met | Asp | Trp | Leu | | 305 | 310 | 315 |
| Glu | Phe | Leu | Ser | Phe | Leu | Leu | Ser | Pro | Leu | Glu | Leu | Ser | Asp | Ser | | 320 | 325 | 330 |
| Glu | Pro | Val | Val | Val | Tyr | Gly | Met | Asp | Tyr | Leu | Gln | Gln | Val | Ser | | 335 | 340 | 345 |

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|-------------------------------------|-------------------------|
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| Phe Glu Ser Ala Gln Glu Lys Leu Leu | Glu Thr Leu Tyr Gly Thr |
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| Lys Lys Ser Cys Val Pro Arg Trp Gln | Thr Cys Ile Ser Asn Thr |
| 395 | 400 405 |
| Asp Asp Ala Leu Gly Phe Ala Leu Gly | Ser Leu Phe Val Lys Ala |
| 410 | 415 420 |
| Thr Phe Asp Arg Gln Ser Lys Glu Ile | Ala Glu Gly Met Ile Ser |
| 425 | 430 435 |
| Glu Ile Arg Thr Ala Phe Glu Glu Ala | Leu Gly Gln Leu Val Trp |
| 440 | 445 450 |
| Met Asp Glu Lys Thr Arg Gln Ala Ala | Lys Glu Lys Ala Asp Ala |
| 455 | 460 465 |
| Ile Tyr Asp Met Ile Gly Phe Pro Asp | Phe Ile Leu Glu Pro Lys |
| 470 | 475 480 |
| Glu Leu Asp Asp Val Tyr Asp Gly Tyr | Glu Ile Ser Glu Asp Ser |
| 485 | 490 495 |
| Phe Phe Gln Asn Met Leu Asn Leu Tyr | Asn Phe Ser Ala Lys Val |
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| Met Ala Asp Gln Leu Arg Lys Pro Pro | Ser Arg Asp Gln Trp Ser |
| 515 | 520 525 |
| Met Thr Pro Gln Thr Val Asn Ala Tyr | Tyr Leu Pro Thr Lys Asn |
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| Arg Asn His Pro Lys Ala Leu Asn Phe | Gly Gly Ile Gly Val Val |
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| Leu Ala Ala Phe Arg Asn His Thr Ala | Cys Met Glu Glu Gln Tyr |
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| | | | | | | | | | | | | | | | |
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| Leu | Pro | Ala | Val | Gly | Leu | Thr | Asn | His | Gln | Leu | Phe | Phe | Val | Gly | |
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| Phe | Ala | Gln | Val | Trp | Cys | Ser | Val | Arg | Thr | Pro | Glu | Ser | Ser | His | |
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| Cys | Pro | Val | Gly | Ser | Pro | Met | Asn | Pro | Gly | Gln | Leu | Cys | Glu | Val | |
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<210> 612

<211> 352

<212> PRT

<213> Homo Sapien

<400> 612

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Met | Leu | Leu | Val | Gln | Gly | Ala | Cys | Cys | Ser | Asn | Gln | Trp | Leu |
| 1 | | | | 5 | | | | | | 10 | | | | 15 |
| Ala | Ala | Val | Leu | Leu | Ser | Leu | Cys | Cys | Leu | Leu | Pro | Ser | Cys | Leu |
| | | | | 20 | | | | | | 25 | | | | 30 |
| Pro | Ala | Gly | Gln | Ser | Val | Asp | Phe | Pro | Trp | Ala | Ala | Val | Asp | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Met | Met | Val | Arg | Lys | Gly | Asp | Thr | Ala | Val | Leu | Arg | Cys | Tyr | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Glu | Asp | Gly | Ala | Ser | Lys | Gly | Ala | Trp | Leu | Asn | Arg | Ser | Ser | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ile | Phe | Ala | Gly | Gly | Asp | Lys | Trp | Ser | Val | Asp | Pro | Arg | Val | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Ser | Thr | Leu | Asn | Lys | Arg | Asp | Tyr | Ser | Leu | Gln | Ile | Gln | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Val | Asp | Val | Thr | Asp | Asp | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr |

| 110 | 115 | 120 |
|-------------------------------------|-------------------------|-----|
| Gln His Thr Pro Arg Thr Met Gln Val | His Leu Thr Val Gln Val | |
| 125 | 130 | 135 |
| Pro Pro Lys Ile Tyr Asp Ile Ser Asn | Asp Met Thr Val Asn Glu | |
| 140 | 145 | 150 |
| Gly Thr Asn Val Thr Leu Thr Cys Leu | Ala Thr Gly Lys Pro Glu | |
| 155 | 160 | 165 |
| Pro Ser Ile Ser Trp Arg His Ile Ser | Pro Ser Ala Lys Pro Phe | |
| 170 | 175 | 180 |
| Glu Asn Gly Gln Tyr Leu Asp Ile Tyr | Gly Ile Thr Arg Asp Gln | |
| 185 | 190 | 195 |
| Ala Gly Glu Tyr Glu Cys Ser Ala Glu | Asn Ala Val Ser Phe Pro | |
| 200 | 205 | 210 |
| Asp Val Arg Lys Val Lys Val Val Val | Asn Phe Ala Pro Thr Ile | |
| 215 | 220 | 225 |
| Gln Glu Ile Lys Ser Gly Thr Val Thr | Pro Gly Arg Ser Gly Leu | |
| 230 | 235 | 240 |
| Ile Arg Cys Glu Gly Ala Gly Val Pro | Pro Pro Ala Phe Glu Trp | |
| 245 | 250 | 255 |
| Tyr Lys Gly Glu Lys Lys Leu Phe Asn | Gly Gln Gln Gly Ile Ile | |
| 260 | 265 | 270 |
| Ile Gln Asn Phe Ser Thr Arg Ser Ile | Leu Thr Val Thr Asn Val | |
| 275 | 280 | 285 |
| Thr Gln Glu His Phe Gly Asn Tyr Thr | Cys Val Ala Ala Asn Lys | |
| 290 | 295 | 300 |
| Leu Gly Thr Thr Asn Ala Ser Leu Pro | Leu Asn Pro Pro Ser Thr | |
| 305 | 310 | 315 |
| Ala Gln Tyr Gly Ile Thr Gly Ser Ala | Asp Val Leu Phe Ser Cys | |
| 320 | 325 | 330 |
| Trp Tyr Leu Val Leu Thr Leu Ser Ser | Phe Thr Ser Ile Phe Tyr | |
| 335 | 340 | 345 |
| Leu Lys Asn Ala Ile Leu Gln | | |
| 350 | | |

<210> 613

<211> 1797

<212> DNA

<213> Homo Sapien

<400> 613

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<210> 614
 <211> 520
 <212> PRT
 <213> Homo Sapien

<400> 614

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Arg | Asn | Lys | Lys | Ile | Leu | Lys | Glu | Asp | Glu | Leu | Leu | Ser | Glu | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Gln | Gln | Ala | Ala | Phe | His | Gln | Ile | Ala | Met | Glu | Pro | Phe | Glu | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ile | Asn | Val | Pro | Lys | Pro | Lys | Arg | Arg | Asn | Gly | Val | Asn | Phe | Ser | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Leu | Ala | Val | Val | Val | Ile | Tyr | Leu | Ile | Leu | Leu | Thr | Ala | Gly | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gly | Leu | Leu | Val | Val | Gln | Val | Leu | Asn | Leu | Gln | Ala | Arg | Leu | Arg | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Leu | Glu | Met | Tyr | Phe | Leu | Asn | Asp | Thr | Leu | Ala | Ala | Glu | Asp | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Pro | Ser | Phe | Ser | Leu | Leu | Gln | Ser | Ala | His | Pro | Gly | Glu | His | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Leu | Ala | Gln | Gly | Ala | Ser | Arg | Leu | Gln | Val | Leu | Gln | Ala | Gln | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Thr | Trp | Val | Arg | Val | Ser | His | Glu | His | Leu | Leu | Gln | Arg | Val | Asp | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Asn | Phe | Thr | Gln | Asn | Pro | Gly | Met | Phe | Arg | Ile | Lys | Gly | Glu | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Ala | Pro | Gly | Leu | Gln | Gly | His | Lys | Gly | Ala | Met | Gly | Met | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Gly | Ala | Pro | Gly | Pro | Pro | Gly | Pro | Pro | Ala | Glu | Lys | Gly | Ala | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Ala | Met | Gly | Arg | Asp | Gly | Ala | Thr | Gly | Pro | Ser | Gly | Pro | Gln | |

| 185 | | | | | 190 | | | | | 195 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Pro | Gly | Val | Lys | Gly | Glu | Ala | Gly | Leu | Gln | Gly | Pro | Gln |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gly | Ala | Pro | Gly | Lys | Gln | Gly | Ala | Thr | Gly | Thr | Pro | Gly | Pro | Gln |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Gly | Glu | Lys | Gly | Ser | Lys | Gly | Asp | Gly | Gly | Leu | Ile | Gly | Pro | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Gly | Glu | Thr | Gly | Thr | Lys | Gly | Glu | Lys | Gly | Asp | Leu | Gly | Leu | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gly | Ser | Lys | Gly | Asp | Arg | Gly | Met | Lys | Gly | Asp | Ala | Gly | Val | Met |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gly | Pro | Pro | Gly | Ala | Gln | Gly | Ser | Lys | Gly | Asp | Phe | Gly | Arg | Pro |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Gly | Pro | Pro | Gly | Leu | Ala | Gly | Phe | Pro | Gly | Ala | Lys | Gly | Asp | Gln |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Gly | Gln | Pro | Gly | Leu | Gln | Gly | Val | Pro | Gly | Pro | Pro | Gly | Ala | Val |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Gly | His | Pro | Gly | Ala | Lys | Gly | Glu | Pro | Gly | Ser | Ala | Gly | Ser | Pro |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Gly | Arg | Ala | Gly | Leu | Pro | Gly | Ser | Pro | Gly | Ser | Pro | Gly | Ala | Thr |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Gly | Leu | Lys | Gly | Ser | Lys | Gly | Asp | Thr | Gly | Leu | Gln | Gly | Gln | Gln |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Gly | Arg | Lys | Gly | Glu | Ser | Gly | Val | Pro | Gly | Pro | Ala | Gly | Val | Lys |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Gly | Glu | Gln | Gly | Ser | Pro | Gly | Leu | Ala | Gly | Pro | Lys | Gly | Ala | Pro |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Gly | Gln | Ala | Gly | Gln | Lys | Gly | Asp | Gln | Gly | Val | Lys | Gly | Ser | Ser |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Gly | Glu | Gln | Gly | Val | Lys | Gly | Glu | Lys | Gly | Glu | Arg | Gly | Glu | Asn |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Ser | Val | Ser | Val | Arg | Ile | Val | Gly | Ser | Ser | Asn | Arg | Gly | Arg | Ala |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Glu | Val | Tyr | Tyr | Ser | Gly | Thr | Trp | Gly | Thr | Ile | Cys | Asp | Asp | Glu |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Trp | Gln | Asn | Ser | Asp | Ala | Ile | Val | Phe | Cys | Arg | Met | Leu | Gly | Tyr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Ser | Lys | Gly | Arg | Ala | Leu | Tyr | Lys | Val | Gly | Ala | Gly | Thr | Gly | Gln |

| | | |
|---|-----|-----|
| 470 | 475 | 480 |
| Ile Trp Leu Asp Asn Val Gln Cys Arg Gly Thr Glu Ser Thr Leu | | |
| 485 | 490 | 495 |
| Trp Ser Cys Thr Lys Asn Ser Trp Gly His His Asp Cys Ser His | | |
| 500 | 505 | 510 |
| Glu Glu Asp Ala Gly Val Glu Cys Ser Val | | |
| 515 | 520 | |

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 <211> 647
 <212> DNA
 <213> Homo Sapien

<400> 615
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 aaaagccaaa atgaaactga tgggtacttgt tttcaccatt gggctaactt 200
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 <211> 98
 <212> PRT
 <213> Homo Sapien

<400> 616
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 20 25 30
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 35 40 45

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Asp | Leu | Thr | Gln | Ile | Asp | Val | Asn | Val | Gln | Asp | His | Phe | Trp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Gly | Lys | Gly | Cys | Glu | Met | Ile | Cys | Tyr | Cys | Asn | Phe | Ser | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Leu | Cys | Cys | Pro | Lys | Asp | Val | Phe | Phe | Gly | Pro | Lys | Ile | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Phe | Val | Ile | Pro | Cys | Asn | Asn | Gln | | | | | | | |
| | | | | 95 | | | | | | | | | | |

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 <211> 2558
 <212> DNA
 <213> Homo Sapien

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 atatataa 2558

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 <211> 750
 <212> PRT
 <213> Homo Sapien

<400> 618
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 35 40 45
 Ser Asn Glu Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala
 50 55 60
 Phe Leu Asp Glu Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu His
 65 70 75
 Asn Phe Thr Gln Ile Pro His Leu Ala Gly Thr Glu Gln Asn Phe
 80 85 90
 Gln Leu Ala Lys Gln Ile Gln Ser Gln Trp Lys Glu Phe Gly Leu
 95 100 105
 Asp Ser Val Glu Leu Ala His Tyr Asp Val Leu Leu Ser Tyr Pro
 110 115 120
 Asn Lys Thr His Pro Asn Tyr Ile Ser Ile Ile Asn Glu Asp Gly
 125 130 135
 Asn Glu Ile Phe Asn Thr Ser Leu Phe Glu Pro Pro Pro Pro Gly
 140 145 150
 Tyr Glu Asn Val Ser Asp Ile Val Pro Pro Phe Ser Ala Phe Ser
 155 160 165
 Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr Val Asn Tyr Ala
 170 175 180
 Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met Lys Ile Asn
 185 190 195
 Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val Phe Arg
 200 205 210

| | | | |
|-----------------|---------------------|---------------------|-----|
| Gly Asn Lys Val | Lys Asn Ala Gln Leu | Ala Gly Ala Lys Gly | Val |
| 215 | 220 | 225 | |
| Ile Leu Tyr Ser | Asp Pro Ala Asp Tyr | Phe Ala Pro Gly Val | Lys |
| 230 | 235 | 240 | |
| Ser Tyr Pro Asp | Gly Trp Asn Leu Pro | Gly Gly Gly Val Gln | Arg |
| 245 | 250 | 255 | |
| Gly Asn Ile Leu | Asn Leu Asn Gly Ala | Gly Asp Pro Leu Thr | Pro |
| 260 | 265 | 270 | |
| Gly Tyr Pro Ala | Asn Glu Tyr Ala Tyr | Arg Arg Gly Ile Ala | Glu |
| 275 | 280 | 285 | |
| Ala Val Gly Leu | Pro Ser Ile Pro Val | His Pro Ile Gly Tyr | Tyr |
| 290 | 295 | 300 | |
| Asp Ala Gln Lys | Leu Leu Glu Lys Met | Gly Gly Ser Ala Pro | Pro |
| 305 | 310 | 315 | |
| Asp Ser Ser Trp | Arg Gly Ser Leu Lys | Val Pro Tyr Asn Val | Gly |
| 320 | 325 | 330 | |
| Pro Gly Phe Thr | Gly Asn Phe Ser Thr | Gln Lys Val Lys Met | His |
| 335 | 340 | 345 | |
| Ile His Ser Thr | Asn Glu Val Thr Arg | Ile Tyr Asn Val Ile | Gly |
| 350 | 355 | 360 | |
| Thr Leu Arg Gly | Ala Val Glu Pro Asp | Arg Tyr Val Ile Leu | Gly |
| 365 | 370 | 375 | |
| Gly His Arg Asp | Ser Trp Val Phe Gly | Gly Ile Asp Pro Gln | Ser |
| 380 | 385 | 390 | |
| Gly Ala Ala Val | Val His Glu Ile Val | Arg Ser Phe Gly Thr | Leu |
| 395 | 400 | 405 | |
| Lys Lys Glu Gly | Trp Arg Pro Arg Arg | Thr Ile Leu Phe Ala | Ser |
| 410 | 415 | 420 | |
| Trp Asp Ala Glu | Glu Phe Gly Leu Leu | Gly Ser Thr Glu Trp | Ala |
| 425 | 430 | 435 | |
| Glu Glu Asn Ser | Arg Leu Leu Gln Glu | Arg Gly Val Ala Tyr | Ile |
| 440 | 445 | 450 | |
| Asn Ala Asp Ser | Ser Ile Glu Gly Asn | Tyr Thr Leu Arg Val | Asp |
| 455 | 460 | 465 | |
| Cys Thr Pro Leu | Met Tyr Ser Leu Val | His Asn Leu Thr Lys | Glu |
| 470 | 475 | 480 | |
| Leu Lys Ser Pro | Asp Glu Gly Phe Glu | Gly Lys Ser Leu Tyr | Glu |
| 485 | 490 | 495 | |

| | | | |
|---|-----|-----|-----|
| Ser Trp Thr Lys Lys Ser Pro Ser Pro Glu Phe Ser Gly Met Pro | 500 | 505 | 510 |
| Arg Ile Ser Lys Leu Gly Ser Gly Asn Asp Phe Glu Val Phe Phe | 515 | 520 | 525 |
| Gln Arg Leu Gly Ile Ala Ser Gly Arg Ala Arg Tyr Thr Lys Asn | 530 | 535 | 540 |
| Trp Glu Thr Asn Lys Phe Ser Gly Tyr Pro Leu Tyr His Ser Val | 545 | 550 | 555 |
| Tyr Glu Thr Tyr Glu Leu Val Glu Lys Phe Tyr Asp Pro Met Phe | 560 | 565 | 570 |
| Lys Tyr His Leu Thr Val Ala Gln Val Arg Gly Gly Met Val Phe | 575 | 580 | 585 |
| Glu Leu Ala Asn Ser Ile Val Leu Pro Phe Asp Cys Arg Asp Tyr | 590 | 595 | 600 |
| Ala Val Val Leu Arg Lys Tyr Ala Asp Lys Ile Tyr Ser Ile Ser | 605 | 610 | 615 |
| Met Lys His Pro Gln Glu Met Lys Thr Tyr Ser Val Ser Phe Asp | 620 | 625 | 630 |
| Ser Leu Phe Ser Ala Val Lys Asn Phe Thr Glu Ile Ala Ser Lys | 635 | 640 | 645 |
| Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys Ser Asn Pro Ile Val | 650 | 655 | 660 |
| Leu Arg Met Met Asn Asp Gln Leu Met Phe Leu Glu Arg Ala Phe | 665 | 670 | 675 |
| Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg His Val | 680 | 685 | 690 |
| Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser Phe | 695 | 700 | 705 |
| Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp | 710 | 715 | 720 |
| Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala | 725 | 730 | 735 |
| Ala Phe Thr Val Gln Ala Ala Ala Glu Thr Leu Ser Glu Val Ala | 740 | 745 | 750 |

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<223> Synthetic Oligonucleotide probe

<400> 624

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